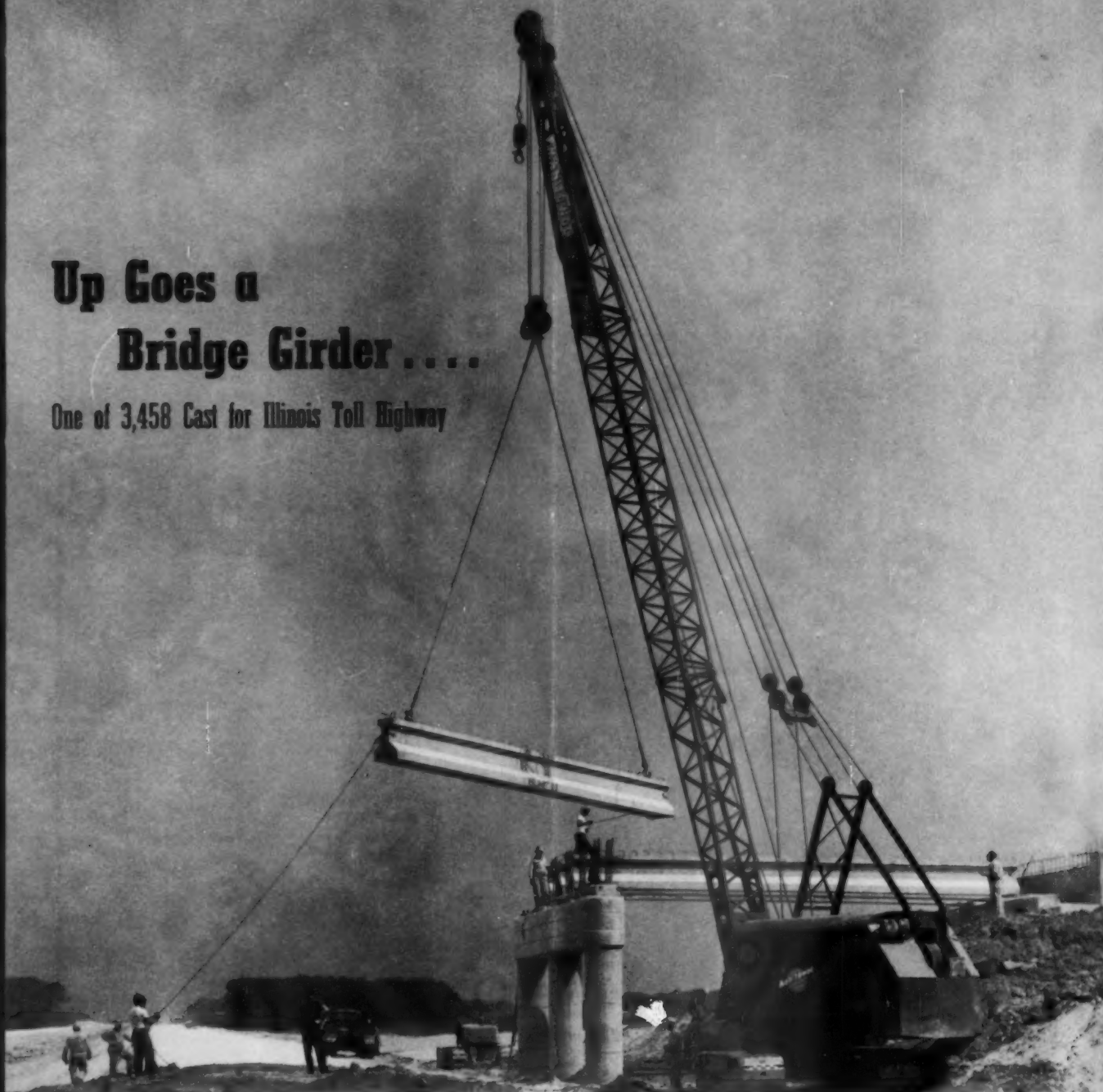


## Up Goes a Bridge Girder . . . .

One of 3,458 Cast for Illinois Toll Highway



**20 Stories of Precast Window Frames, page 22**

Keep

YEARS AHEAD TOMORROW

WITH  
ANY



GOCORP "SUPER" TRUSTEE

# Hydraulic GOCORP "TRUSTEE"

NO DRAWING BOARD DREAM BUT THOROUGHLY FIELD TESTED—THE BIG, HEAVY DUTY, 3 at a time, PLAIN PALLET, "SUPER" TRUSTEE IS READY TO GO TO WORK FOR YOU NOW!

## CONSIDER THESE FACTS!!!

- **HIGHER PRODUCTION**—Up to 1100 good blocks per hour, with many aggregates, without abusing the machine.
- **TOP QUALITY BLOCKS**—Fewer culls in production • Fewer rejects on the job • Variable cycle—for complete flexibility and constant control of quality • Accurate height control.
- **LOWER MAINTENANCE**—Hydraulic operation means fewer wearing parts • Smoother operation • The elimination of cams, cam followers and gears means big maintenance savings for you.

- **QUICK MOLD CHANGE**—Change full height molds in about 20 minutes—to other heights in about 30.
- **RUGGED CONSTRUCTION**—Heavy duty frame with heavy plate cross bracing — Heavy duty bearings — 5" dia. cross shafts • The "Trustee" is built to last.
- **NO BRAKE FAILURE**—"Trustee" vibrator motors are 10 HP plug reversing type • Designed for frequent stops and starts • No brakes to cause trouble.

Both the "SUPER" TRUSTEE and the new economy model, TRUSTEE "SPECIAL" (also a 3 at a time), will accommodate, without alteration, molds of the majority of plain pallet machines now in use. You can have all the advantages of the modern hydraulic TRUSTEES and protect your mold investment tool

AND THAT'S NOT ALL - Ask about these other fast selling hydraulic TRUSTEE models:

TRUSTEE "SPECIAL" ..... 3 at a time economy model  
TRUSTEE 2½X ..... up to two 10 x 8 x 16" units per cycle and other combinations  
TRUSTEE 2X ..... up to two 8 x 8 x 16" units per cycle and other combinations

IT COSTS LESS TO OWN A GOCORP . . .

. . . BECAUSE VALUE IS A GOCORP PRODUCT

**GOCORP**  
ADRIAN-MICH.

401 Grand Street

Adrian, Michigan

# Modern Home FOR "THE MODERN METAL"

**Giant New Reynolds**

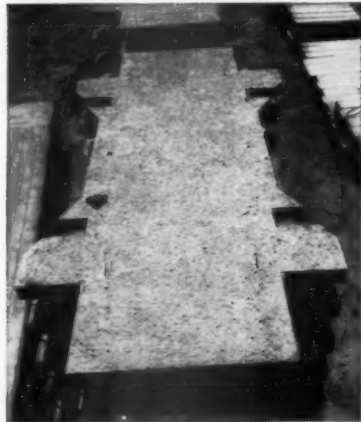
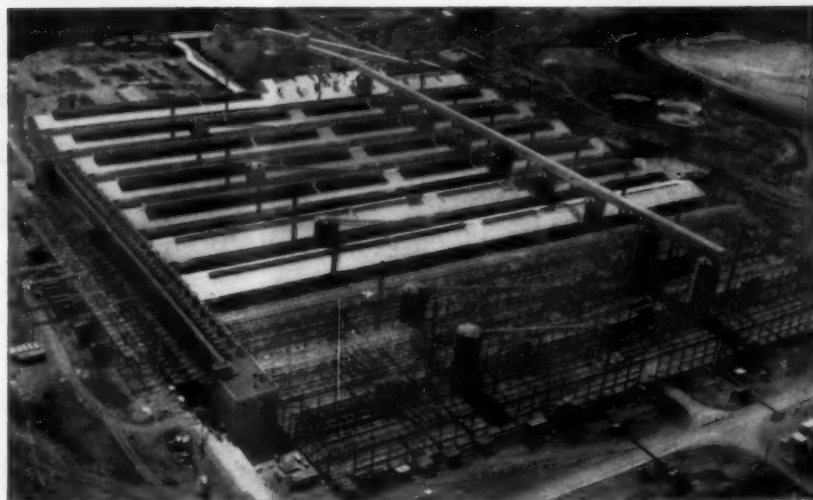
**Aluminum**

**Reduction Plant**

**Embodies Unique**

**Uses of Versatile**

**Prestressed Concrete**



UNIQUE FLOOR SLAB (above)  
"Double Hourglass" slab roughened for  
bond to topping is one of many intri-  
cate shapes used in Pot Room buildings.

• An unusual feature of the mammoth project for the Reynolds Metals Company, near Muscle Shoals, in northern Alabama, is the unique floor system of the nine Pot Room buildings.

These floors are prestressed concrete units set on precast columns and beams. Some 3,000 of the units are shaped into many complicated designs which made prestressing a real problem.

The Pot Room buildings house huge reduction pots in which alumina is reduced by electrolysis. Considerable heat is generated by these pots. So to maintain comfortable floor temperatures, nearly 250,000 two-inch-round holes were provided in the prestressed floor slabs through which rapid changes of air are forced.

Over 20,000 cubic yards of con-

crete made with 'Incor',\* America's FIRST high early strength portland cement, were used in the production of the 12,000 precast and prestressed structural units that went into the project.

Success of the over-all results achieved attest to the research, planning, and know-how of the engineering and construction staffs. Here indeed is a highly imaginative demonstration of the forward march of prestressed, precast concrete that is making construction history.

\*Reg. U. S. Pat. Off.

Owner  
REYNOLDS METALS COMPANY, Listerhill, Alabama  
General Contractor  
DANIEL EDENFIELD-KAIGHN, Sheffield, Alabama  
Precast, Prestressed Concrete  
TEXSTAR CORPORATION, Construction Division  
San Antonio, Texas  
Prestressed Design Consultant  
ROSS H. BRYAN, Nashville, Tennessee



LONE STAR CEMENTS COVER  
THE ENTIRE CONSTRUCTION FIELD

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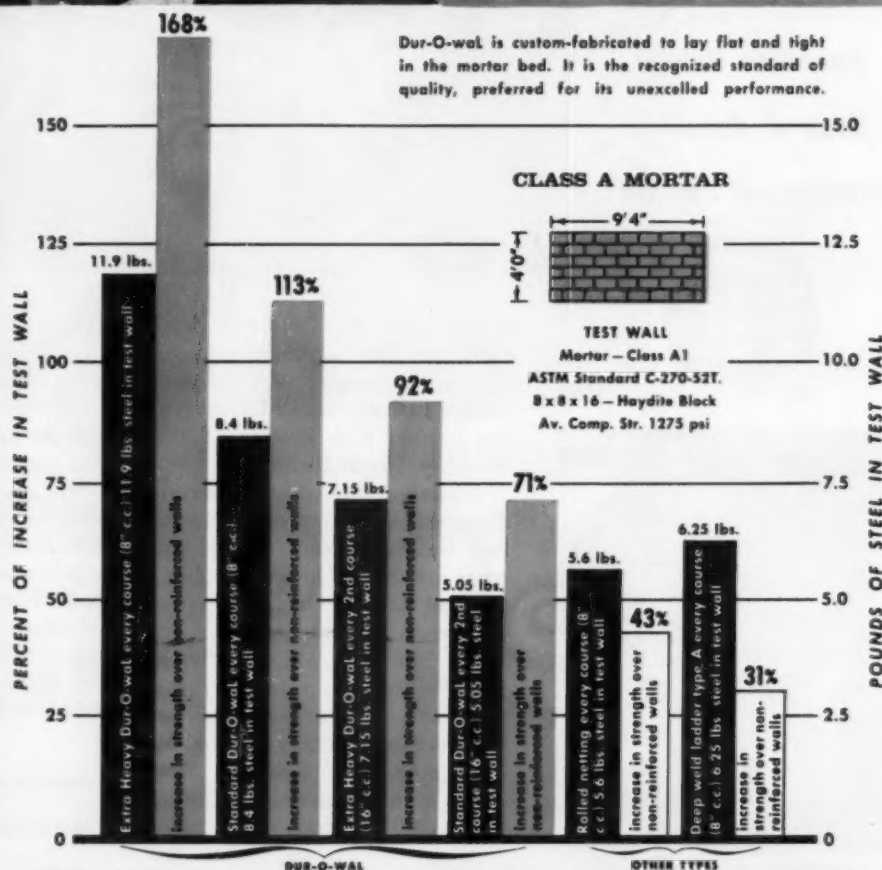
LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST  
CEMENT PRODUCERS: 21 MODERN MILLS, 48,900,000 BARRELS ANNUAL CAPACITY



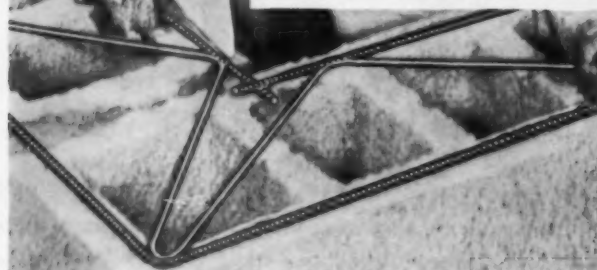
# DUR-O-WAL®

Is Your Most  
Economical and Effective  
Steel Masonry  
Reinforcing

Dur-O-wal is custom-fabricated to lay flat and tight in the mortar bed. It is the recognized standard of quality, preferred for its unexcelled performance.



Weights per thousand feet — Extra Heavy Dur-O-wal 237 pounds; Standard Dur-O-wal 187 pounds; Rolled Netting Type 113 pounds; Deep Weld Ladder Type 139 pounds.



Tests Conducted by Toledo University Research Foundation

## DUR-O-WAL®

Rigid Backbone of Steel For Every Masonry Wall

Dur-O-wal Div., Cedar Rapids Block Co., CEDAR RAPIDS, IA. Dur-O-wal Prod., Inc., Box 628, STREASPORT, IL. Dur-O-wal Div., Frontier Mfg. Co., Box 49, PROCTOR, PA. Dur-O-wal Prod., Inc., 4500 E. Lombard St., BALTIMORE, MD. Dur-O-wal of Ill., 119 N. River St., AURORA, IL. Dur-O-wal Prod. of Ala., Inc., Box 5446, BIRMINGHAM, ALA. Dur-O-wal of Colorado, 29th and Court St., PUEBLO, COLORADO. Dur-O-wal Inc., 165 Utah Street, TOLEDO, OHIO.



# AUGUST 1958

# CONCRETE

For producers of concrete block, precast and prestressed concrete products and ready mixed concrete

VOL. 66, NO. 8 • EST. 1904 • PUBLISHED MONTHLY BY CONCRETE PUBLISHING CORP. • 400 W. MADISON ST., CHICAGO 6, ILL. • CENTRAL 6-8822

## FEATURES FOR THIS MONTH

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**DOUGLAS LEE**

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Production Manager

**G. E. LEIGHT**

Circulation Manager

## DEPARTMENTS

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Calendar ..... 9

Manufacturers' Notes ..... 13

Equipment and Materials ..... 35

Advertisers' Index .. 48

### 3,458 Bridge Girders Cast (Cover Picture) ..... 19

*Material Service Corporation, Algonquin, Ill., has completed its sizeable order for bridge girders for the Illinois Toll Highway Commission: 1,800 miles of strand used; 319,000 linear ft. of girders produced; and 100,000 tons of concrete used.*

### Labor, Fuels, and Merchandising Draw RM Producers to Cleveland .... 20

*A varied and interesting program moved many of the Ohio Ready Mixed Producers to come to Cleveland in June, to partake of the Association's annual meeting. Here is a summary of the highlights of that meeting.*

### 20-Story Building Faced with 4,000 Precast Window Frames ..... 22

*Otto Buckner & Co. is casting this number of 9 1/2-ft.-high window frames at Salt Lake City; then will ship them to Denver to be used as a facing for a large downtown building.—By Truman Sparks.*

### Merchandising Quality Ready Mixed Concrete ..... 24

*As NRMCA President M. Eugene Sundt explained, in his talk to the Ohio Ready Mixed Concrete Association, both the words merchandising and quality mean different things to different people. The contractor has one opinion; the architect another; and the producer still a third. Here is the complete text of Mr. Sundt's talk at the Ohio Association's annual meeting.*

### A Glossary of Concrete Masonry Terms ..... 29

*So as to increase the readership of and comments on the NCMA's Glossary of Concrete Masonry Terms, CONCRETE, with the NCMA's permission, is publishing the complete Glossary in this issue.*

### Want to Help Write a Dictionary?—Editorial ..... 17

*Not only are we hoping concrete products producers will read and communicate their comments to the NCMA on the present form of the Glossary; but also we're hoping other groups in the concrete industries will begin work on similar glossaries. We would like to see, some time in the future, a sort of dictionary of concrete terminology; such a dictionary would prove helpful to many people, both inside and outside the concrete industry.*



Advertising Representatives: Porter Wylie & Co., 114 East 13th St., New York 3, N. Y., Phone: Gramercy 5-3581; Crawford L. Elder, 2500 El Venado Drive, La Puente, Calif., Phone: Oxford 4-4116; Clarence L. Morton, 294 Washington St., Boston 8, Mass., Phone: Liberty 2-8538. Subscription Price: \$6.00 for one year, \$11.00 for two years, postpaid. No subscriptions accepted for longer than two years. Single copies, 50 cents each. Copyright 1958 by Concrete Publishing Corp. Accepted as controlled circulation publication at Mendota, Ill.

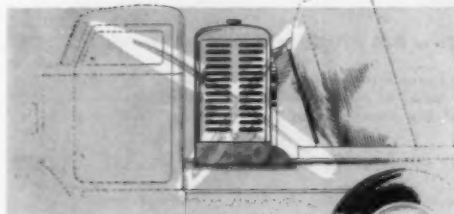
# NEW

## STEWART HYDRAMIX

### HYDRAULIC CONCRETE MIXER

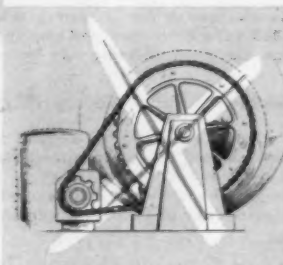


**"THE READY PACKAGE FOR THE READY-MIX INDUSTRY"**



### NOW YOU CAN SAVE ON YOUR TRANSIT — MIXING OPERATING COSTS

The new Stewart "Hydramix" Hydraulic Concrete Mixer has only 2 exposed working parts (the rollers for the drum). The revolutionary Stewart hydraulic power unit provides constant drum RPM regardless of truck engine RPM . . . eliminates need for auxiliary engine . . . cushions shock loads and eliminates overloads. The Stewart positive-action worm-gear drive provides trouble-free service for the life of the mixer. The Stewart 90 gallon pressure water tank (standard equipment) eliminates need for water pump and saves on maintenance. The Stewart simple remote control system saves driver fatigue and makes it easier to train new operators. Stewart provides (as standard equipment) a hydraulic chute hoist for easy positioning of chute. Get complete details on all the many exciting new features of the Stewart Hydramix. Write today for an 8-page illustrated brochure, or call

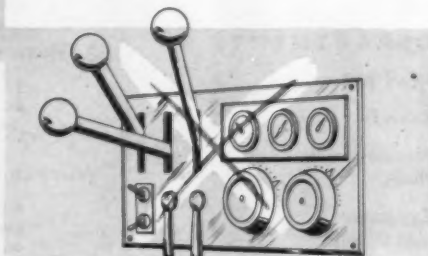


### NO AUXILIARY ENGINE

No longer is it necessary to operate and maintain a separate engine for the mixer! Stewart hydraulic power and the flywheel power take-off make the auxiliary engine obsolete.

### NO CHAIN DRIVE

You need not worry about chain-drive break-downs any longer! The old sprocket and chain-drive system is now obsolete. Save money, time and labor with the Stewart Hydramix.



### NO COMPLICATED CONTROLS

It doesn't take a wizard to run a concrete mixer, any more! Gone is the need for long-distance, complex hook-ups and control systems. The Stewart way is the simple, easy way!



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EXCLUSIVE DISTRIBUTOR FOR STEWART HYDRAMIX—"First with Hydraulics for the Ready-Mix Industry"  
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# FROM THE NEWS DESK

## Informative Program For Prestress Meeting

Special attention will be given to the fast-moving new developments in applications of prestressed concrete at the five-day convention of the Prestressed Concrete Institute in Chicago, Sept. 21 to 25. Ben C. Gerwick, Jr., Petaluma, Calif., president of the Institute, will report on the recent Berlin conference on prestressed concrete. Professor T. Y. Lin, of the University of California at Berkeley, is scheduled to present a report on prestressed concrete in Russia as related to practice in the United States. Several of the convention sessions will feature discussions on marketing and sales of prestressed concrete.

An outstanding feature of the five-day program will be a trip to the Portland Cement Association's research and development laboratories at Skokie, Ill. on Wednesday, Sept. 24.

Phillip E. Balcomb, P.O. Box 391, La Grange, Ill., who is chairman of the General Arrangements committee for the convention, reports that the largest exhibit ever shown of materials and equipment relating to prestressed concrete, will be a feature of the convention. Sessions will be held at the Edgewater Beach Hotel.

## ENR Cost Indexes Reach Record High

Large wage increases and higher material prices moved July construction and building costs to an all-time high, as measured by the 20-cities construction cost and building cost indexes, Engineering News-Record and Construction Daily reports say.

The ENR-CD construction cost index for July is at a record 762.52, a 0.7 per cent boost over the June reading of 757.31 and 5.3 per cent over a year ago. The building cost index, also at an all-time high, is 524.29 in July. This is 0.6 per cent over the June value of 521.09 and 3.5 per cent above last year.

The common labor wage rates now are 7.1 per cent above last year to register the biggest year-to-year increase since 1948-49. The average hourly wage rate stands at \$2.463, including fringe benefits. Rates for skilled labor are up 5 per cent from last year to \$3.72 per hour. However, July brings an end to the rash of mid-year wage increases. Only three cities expect further construction trade wage boosts before the end of this year.

The ENR-CD skilled labor average increases are slightly more than common labor, reversing the trend prevailing earlier this year. The common labor wage average for 20 cities is 0.9 per cent over June. The average for bricklayers, carpenters and structural ironworkers in the ENR-CD 20 cities is up 1.0 per cent in July.

Cement prices turn up again in July. Two cities, Detroit and New Orleans, report prices are up an average of 10 cents a barrel in bulk. This reverses an earlier decline due to freight rate reductions, which were passed along from the dealer level to the buyers in some cities.

## NCMA Annual Report Is Reference Booklet

The 1957 annual report of the National Concrete Masonry Association, recently mailed to members is in the form of a well-illustrated 12-page booklet. In a letter accompanying each copy, Executive Director Underwood said: "This report was primarily designed as a brief but comprehensive reference booklet for all NCMA members. It covers the historical development of the Association, the current reorganization plans and structure of the Association as well as a resume of activities and working program of all departments." Mr. Underwood expressed the belief that the report will serve a dual purpose: as an introductory brochure to all prospective members as well as being an informative reference book.

## Housing Starts Said To Be Above U.S. Average

A Washington bulletin on housing trends, issued by the magazine, *Living for Young Homemakers*, reports that housing starts in May rose a little more than seasonally, to 105,000. This, the bulletin says, compares with 95,000 for April, 1958 and 103,000 in May, 1957.

"Seasonally adjusted," the bulletin says, "private starts in May were at an annual rate of 1,010,000, marking a return to the better-than-a-million rate prevailing during the latter half of 1957 and in January, 1958."

## Two Florida Plants Start Autoclaving

Two concrete block plants, both in Tampa are the first in Florida to use high pressure steam curing, according to the Florida Concrete and Products Association. These plants, the Association says, are operated by the Hartstone Concrete Products Co. and the Tampa Sand & Material Co. The Hartstone company, of which W. E. Scott is manager, used a full page newspaper advertisement to announce the start of autoclave operation on June 16. The Tampa Sand & Gravel Co. was scheduled to begin autoclave curing early in July.

## Swayze of Lone Star Gets ASTM Merit Award

Myron Allan Swayze, director of research, Lone Star Cement Corp., was honored as a recipient of the American Society for Testing Materials Award of Merit at the Society's annual meeting in Boston in June. His citation said the award was: "In recognition of long-time, valued service and support of ASTM administrative and technical activities, especially for constructive contributions to the work of Committee C-1 on Cement."



"We will  
gladly recommend  
your 'Columbia Block  
Splitter' to any block producer  
interested in adding a profitable  
line to his sales" says H. C. Lutes,  
President of Layrite Concrete Products  
Co., Spokane, Washington, in a  
recent letter to Columbia  
Machine.

**LAYRITE** CONCRETE PRODUCTS CO.  
1225 EAST TRENT AVENUE • P.O. BOX 33 • SPOKANE 10, WASHINGTON • KEYSTONE 1315

Columbia Machine Works  
107 South Grand Boulevard  
Vancouver, Washington

Gentlemen:

We are writing to you to express our complete satisfaction with  
your Columbia Automatic Block Splitter.

It is well designed, compact and very portable, which we find is  
very handy in moving to various stock piles, saving us time and  
labor costs.

In making our selection of a "block splitter" we looked very  
thoroughly into the other types of "block splitters" and we are  
very enthusiastic with our selection of Columbia as it has better  
performance than any we inspected.

To date we have split blocks up to and including eight inch thick  
solid blocks with ease and it has been in almost daily use the  
last six months, splitting both our pumice and sandstone units  
which we produce in 16" and 24" lengths.

However, the main point we would like to call to your attention  
is the fact that with the adjustable pressure and split blade  
features, we have practically none of the breakage or waste which  
we noticed prevailed in block plants using other types of "block  
splitters".

You are to be congratulated on a good job and we will gladly recom-  
mend your "Columbia Block Splitter" to any block producer interested  
in adding a profitable line to his sales.

Very truly yours,

LAYRITE CONCRETE PRODUCTS CO.

*H. C. Lutes*  
H. C. Lutes  
President

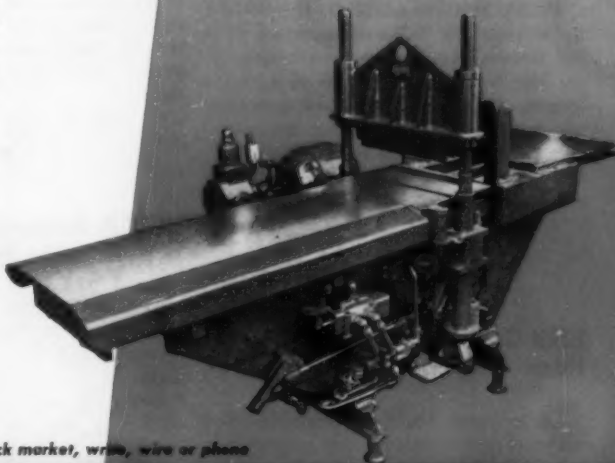
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For complete information

on how you can cash in on the fast-growing split block market, write, wire or phone

You'll make more  
**PROFITS**  
in the **BOOMING**  
**SPLIT BLOCK MARKET**  
with a  
*Columbia*  
**AUTOMATIC  
BLOCK SPLITTER**

- ★ Designed for continuous, high-speed operation . . . saves time and labor costs.
- ★ Compact . . . only 4 feet high, occupies approximately 8 ft. x 5 ft. of operating space.
- ★ Hydraulically operated, opposed, hardened steel blades give accurate, positive splitting action.
- ★ Handles either lightweight or regular concrete block up to 8" in height and 24" in length.
- ★ Available in automatic and semi-automatic models.



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Factory Branch and Warehouse: MATTOON, ILLINOIS Parts Depot and Office: BURBANK, CALIFORNIA

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BLOCK SPLITTERS



MAGNETIC RETURN



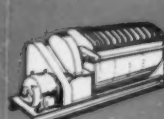
3-BLOCK



2 1/2-BLOCK



2-BLOCK



BATCH MIXERS

PRECISION MOLDS  
TURNABLES  
PUMPING UNITS  
CLEANERS & OILERS  
AUTOMATIC LOADER  
AND UNLOADER



## Layrite Concrete Products Holds Open House for Northwest Block Men, Architects, Engineers

Architects and mechanical engineers from the Spokane area and concrete block plant operators from points throughout the Northwest were guests at a day-long open house at the Layrite Concrete Products Co., Spokane, Washington last month on the occasion of the firm's installation of a new Columbia 12" High block machine and an automatic rack loader and unloader.

Layrite Concrete Products Co., headed by Harold C. Lutes, president, is one of the first Western block producers to couple and have in production a Columbia automatic rack loader and unloader and a 12" High machine, a combination which is said to very nearly approach automation in concrete block manufacturing.

Activities during the open house celebration started at 10 A.M., May 15th with the arrival of a contingent of block plant operators and Columbia Machine executives from Portland and Yakima who were flown to Spokane via Northwest Airlines by Columbia. Also arriving during the morning as guests of Layrite and Columbia Machine were block plant operators from Salt Lake, Idaho and Montana.

Morning activities concluded at a noon luncheon sponsored by Columbia Machine at Spokane's City Club after which many of the visitors returned to the Layrite plant for further inspection of the equipment.

The second session of the open house started at 5 P.M., when Spokane engineers and architects were invited to the Layrite plant to view equipment and types of concrete specialty products produced on the company's new 12" High machine. The early evening visitors were served refreshments and attended an informal dinner followed by a short talk on the company's new 12-inch high products and a movie on the concrete block industry provided by NCMA.

Visitors to the open house were given a first-hand view of the new equipment in production as the Columbia 12" High machine with automatic rack loader and unloader were kept in operation for the event. According to Mr. Lutes, to produce blocks from the aggregate stage to the cured block requires the services of only four men, a batch mixer operator, machine operator, cubing offbearer and lift truck operator, representing a cut in labor overhead of about 40 per cent since the installation of the

plant's new equipment. Standard 8 x 8 x 16-inch cored blocks were produced at the rate of 900 per hour during the open house.

Another feature of the Layrite plant is a new Columbia turntable having two revolving platforms which allow continuous cubing of cured blocks. As the offbearer completes a cube, the turntable makes a half turn positioning the cubed blocks for pick-up by the lift truck operator and places a second and empty platform in position for loading by the cubing offbearer. With the continuous production and high speed of the new Columbia equipment, the twin platform turntable makes it easy for the cubing offbearer to keep pace with block production.

The automatic rack loader and unloader attachment for the Columbia 12" High machine eliminates all manual handling of loaded pallets and racks in the production of concrete products. Green blocks as they come from the machine are automatically stacked on racks which were positioned on the transverse conveyor of the automatic rack loader and unloader by the lift truck operator. Cured blocks are likewise automatically removed from the racks with the blocks moving on a conveyor system to the cubing offbearer and the empty pallets continuing on through a pallet cleaner and oiler and to the machine to go through a new block producing cycle. An ingenious device of the conveyor leading to the cubing offbearer is a mechanism which trips the blocks in transit laying them on their sides and in proper position for convenient pick-up and turntable cubing.

Layrite is fully equipped to produce all types of 12" high units with the installation of the new equipment and has launched an extensive merchandising and sales training pro-

● General view of the Layrite plant with offices in left foreground.



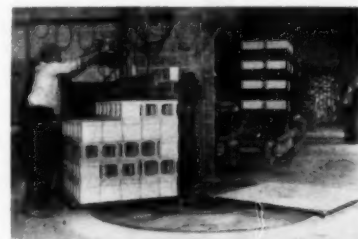
## Upward Trend Shown In Cement Production

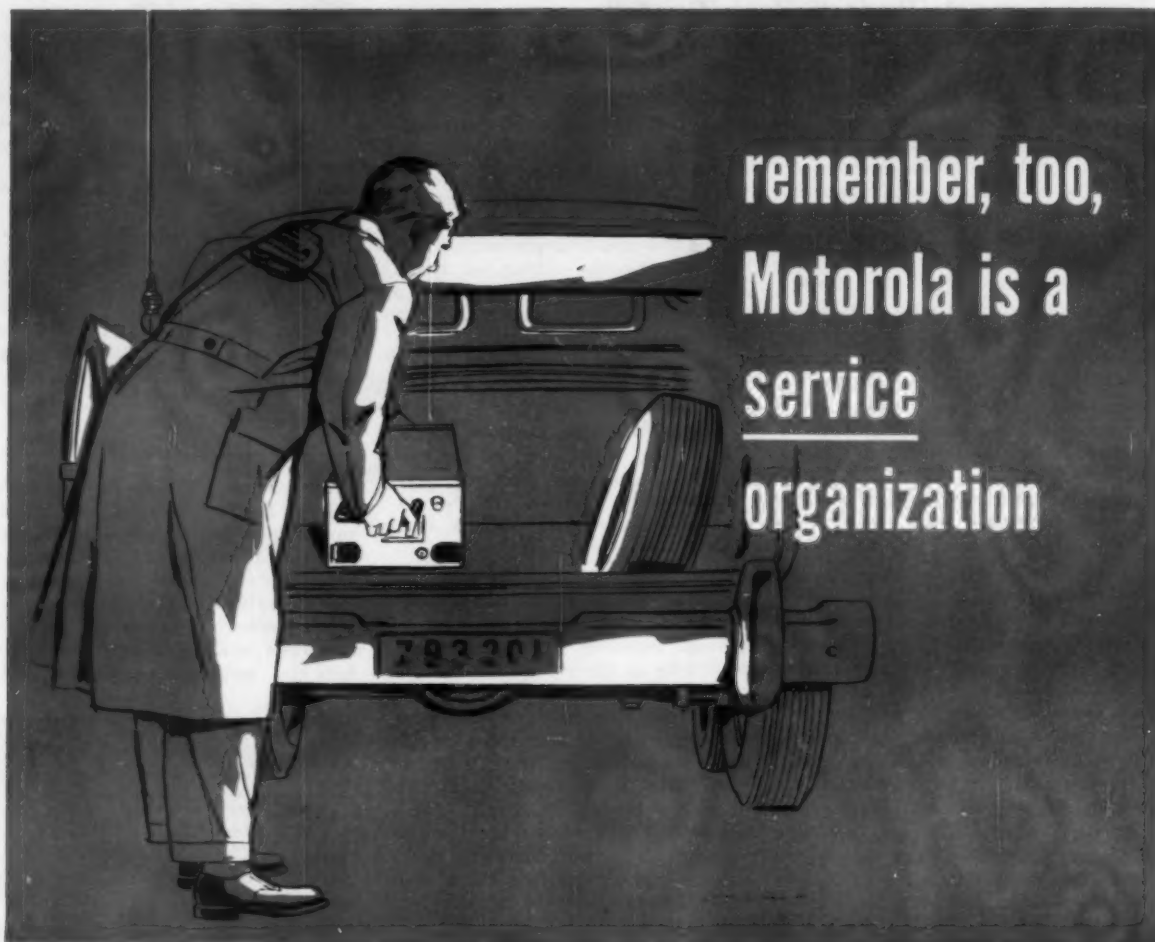
Shipments of portland cement in April, 1958 were 9 per cent more than the shipments in April, 1957 according to U. S. Bureau of Mines reports. At the same time cement production showed an increase of .2 per cent over April, 1957. The Bureau gave the mill shipments of finished portland cement in April, 1958 as 25,318,000 barrels, and production as 24,011,000 barrels. Clinker production in April, 1958 was reported to be 24,171,000 barrels, a decrease of 7 per cent from the same month in 1957.

gram to their dealers in Spokane's Inland Empire area of which the open house for architects and engineers with lectures and moving pictures was one of the first steps. Layrite not only produces, distributes and sells concrete products on both a wholesale and retail level but markets clay and stone products as well.



● Above, visitors watch the automatic rack loader and loader attachment. Below, the turntable is 12 ft. in diameter with two 4 ft. square revolving platforms.





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No matter how large your radio system is—how widely distributed the mobile units are—Motorola can provide system maintenance specifically tailored to your requirements. The Motorola field service organization and 800 Authorized Service Stations are your guarantee of dependable 2-way radio operation month-after-month, year-after-year.

# MOTOROLA

2-WAY RADIO

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A SUBSIDIARY OF MOTOROLA INC.  
4501 AUGUSTA BOULEVARD • CHICAGO 51, ILLINOIS



*For the finest radio communications equipment, as well as the most reliable system maintenance, see Motorola, world's largest exclusive electronics manufacturer and leading supplier of 2-way radio.*



● Twenty-three states were represented at the first automatic batching seminar, sponsored by Forrer's of Milwaukee, Wis., to demonstrate the equipment of Ramsey Engineering Co., St. Paul, Minn., which Forrer's distributes nationally.

## Forrer's Sponsors Automatic Batching Seminar to Demonstrate Ramsey System to Block Producers

At the Curtis Hotel in Minneapolis, June 25, Forrer's Products for Masonry, Milwaukee, Wis., was host to 41 owners and operators of concrete block plants located in 23 states who attended Forrer's first automatic batching seminar. Purpose of the seminar was to demonstrate the operation of the automatic batching system of Ramsey Engineering Co., St. Paul, for which Forrer's is the national distributor.

Following an early breakfast in the Cardinal Room of the Curtis, Mr. Earl Netzband, Forrer's sales manager and master of ceremonies for

the seminar, introduced Mr. Rudy Forrer, president of the company, who extended a cordial welcome to the group. Mr. John Riede, Ramsey's president, then outlined the history and capabilities of his organization and introduced Ramsey engineers in attendance. Robert Cahill, Ramsey's sales manager, then explained the operation of the Ramsey automatic batching control system. Jack Davies, Ramsey's chief engineer, spoke on the importance of the water control system and scale automation in the equipment. Mr. Kenneth Klassy, of Lehigh Portland Cement Co., spoke briefly on the future of automation in the concrete block industry and Mr. Netzband concluded the morning session with a talk outlining the advantages of automatic batching.

Following luncheon, the group toured the block plants of Marshall Concrete Products Co. and Charles M. Freidheim Co. in Minneapolis where the Ramsey system is in operation. Forrer's then hosted the group to a social hour and dinner after which Mr. Stan Cowen of the American National Bank spoke on "The Banker's Views on Automation"; Mr. Herbert Mahle of Ramsey talked of the "Ramsey Purchase

Agreement and Standard Warranty"; and Mr. Gar Kachel of Ramsey spoke on the "Financial Aspects of the ABC System." The seminar was then completed with a question and answer period.

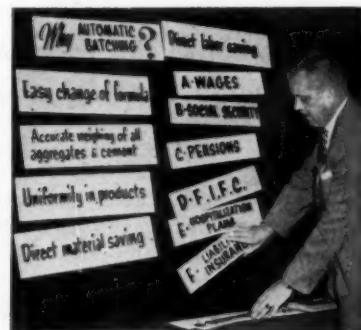
Forrer's considers the seminar idea so successful that a repetition is planned for the early Fall this year. Anyone interested in attending is invited to contact Mr. Netzband at Forrer's, 2225 N. Humboldt Ave., Milwaukee 12, Wis.



● Ramsey's Robert Cahill explains the graphic panel of the ABC system and the manual panel which he is showing. The lower right hand corner of the panel contains a policing system to detect any failure in working parts of the system.

● Earl A. Netzband, Forrer's sales manager, explains the "Why" of automatic batching.

● One of the plant visits was to Marshall Block Co., Minneapolis, Minn.



## Calendar . . .

1958

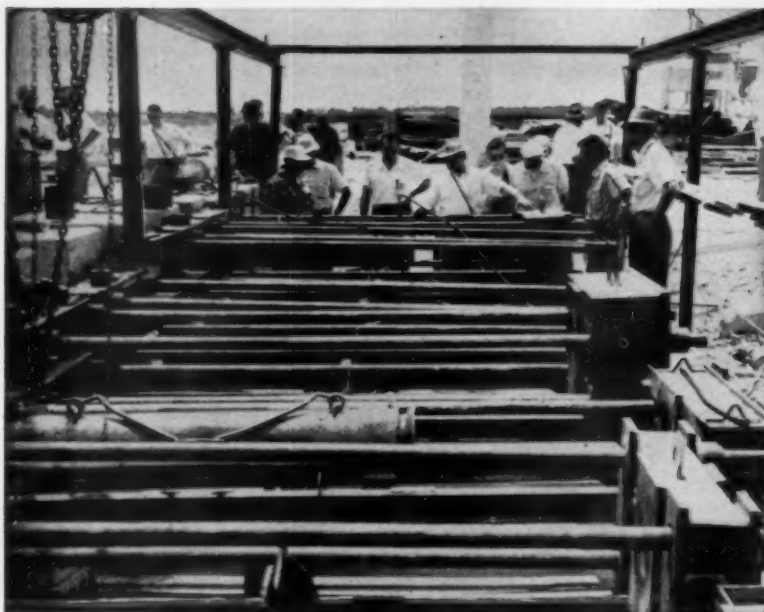
**SEPTEMBER 21-25** Prestressed Concrete Institute — 4th Annual Convention — Edgewater Beach Hotel, Chicago, Ill.

**OCTOBER 13-17** American Society of Civil Engineers — National Convention — Hotel Statler — New York, N.Y.

**OCTOBER 16-19** Empire State Sand, Gravel & Ready Mix Association — Fall Conference — The Concord, Kiamashe Lake, N. Y.

**OCTOBER 23-24** New York State Concrete Masonry Association — Annual Meeting — Hotel Roosevelt, New York, N. Y.

# This Amazing Prestressed Concrete Industry



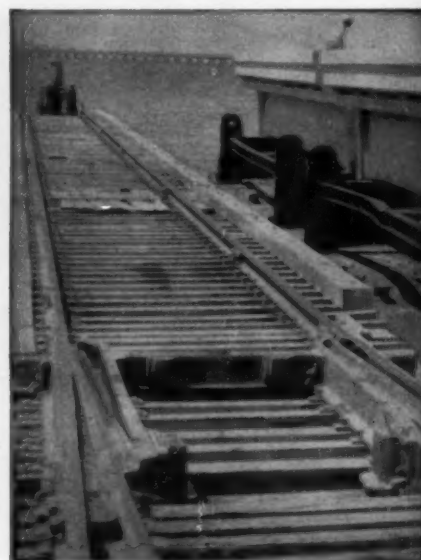
## What Is Behind Its Phenomenal Growth?

This is a question which has been asked many times. Union Wire Rope Corporation has answered with the sound reasons for venturing a huge capital investment in expanded facilities and in research to master the technical know-how of producing prestressed, stress relieved, high tensile wire and strand. Without this key element prestressed concrete would still not be possible and practical.

To check our own reasons and to develop all of the fundamental facts responsible for the spreading use and acceptance of prestressed concrete,

**We Asked A PANEL OF PIONEERS In the  
Prefabrication of Prestressed Concrete Members To  
Summarize the Facts Which Has Enabled Them To  
Maintain a Yearly Growth of 200 to 300 Percent.**

What follows is straight from the horse's mouth. It is a summary of the fundamental facts contributed by a sizeable group of prestressed fabricators and consultants. All are pioneers who have had a part in the development of prestressed concrete and experienced its growth from a trickle five years ago to become the building material to be reckoned with by every factor in the building industry.



**Here Is a List of Prestressed  
Products Which A PANEL OF  
PIONEERS Are Prefabricating**

### Girders

### Roof Slabs

Regular, Lightweight, Lift, Channel, Thin shell, Hollow centers, Composite.

### Beams

### Joists

### Trusses

### Columns

### Piles and Caps

Foundation, Marine, Fender

### Lintels

### Wall Panels

### Siding

### Posts

### Pavements

Highway, Airport

### Stadium

Framing, Seats

### "Future Applications of Prestressed Concrete Beyond Prediction"

These are the words of one and the consensus of opinion of others on our panel of pioneers. Other prestressed concrete products mentioned as either being prefabricated or tested and proposed are:

Missile Wings	Arches
Barges	Skews
Transmission	Spring Board—For
Line Supports	Swimming Pools
Piers	Off-shore Drilling
Seawalls	Piles
Wharfs	Platforms

While some of these may seem novel, many will become commonplace. Prestressing concrete for barges, for example, could very well become an industry in itself as is the prefabricating of bridge members.





## PANEL OF PIONEER Prefabricators Cite These Outstanding Prestressed Concrete Advantages...

### 1. Fully Utilizes Two Inherent Strength Factors

Prestressing combines and enhances the inherent characteristics of two of the foremost construction materials—

- A. The compression strength of concrete with
- B. The high tensile strength of stress relieved cold drawn steel wire and strand.

### 2. Basic Economy

- A. Steel for prestressing is six times stronger than ordinary steel but only approximately 3 times more costly.
- B. Concrete for prestressing is twice as strong but only 10 to 20% more costly than ordinary concrete.
- C. Prestressing consumes less steel and concrete to attain equal or greater structural strength more economically.

### 3. Structural Balance

- A. In prestressed concrete, stresses and strains are balanced to produce structures whose deflections are under definite control.
- B. Cracks, otherwise unavoidable in concrete, are eliminated by prestressing.

### 4. Design Economy

- A. Prestressed concrete makes possible thinner sections, lower depth to span ratios, longer cantilevering without ballast beams and reduction in weight. All of these factors enable the designer to effect savings in foundation, in columns, in wall height or to convert head room into usable cubage.
- B. Steady progress in standardization of sections under the auspices of the Prestressed Concrete Institute is making prestressed concrete more and more versatile from the standpoint of designers.

### 5. Prestressing Is Pre-Testing

- A. Because they are subjected to greater loads in fabrication than is imposed upon them in the field, precast, prestressed members are in reality pre-tested.
- B. Produced by factory methods, under closely controlled conditions, prestressed concrete guarantees the designer structural performance to meet or better expectations and affords relief from extensive supervision and inspections.

### 6. Stock Pile Availability

- A. Factory line production methods with

time saving devices insures delivery of prestressed concrete members from the production line in step with contractors work schedules.

- B. Production of prestressed sections proceeds at top speed, affording maximum utilization of labor and stockpiling against projected construction.

- C. Prestressed concrete eliminates construction delays by by-passing materials in short supply or on extended backlog delivery.

### 7. Speeds Up Construction

- A. Construction by the older, conventional methods involves both erection and fabrication on the job site.

- B. The latter is accomplished much faster in central plants or on the site mechanized plants and the resulting prefabricated units are erected with clock-like precision.

- C. Often it is possible to complete structures in half the time required by conventional methods. It is often possible to erect prestressed concrete in the time required to make, place and shore up forms for poured in place concrete.

### 8. Permanence of Concrete—Plus

- A. Well known is the durability of concrete. Well known too is its vulnerability to cracking. Cracks lay it and its reinforcing open to deterioration.
- B. Prestressing makes concrete a flexible material with the ability to withstand extraordinary deflection and recover without cracking.

### 9. Insurance Savings

- Comparison of insurance premiums are

reported on new buildings with prestressed concrete roofs as against old buildings with wood roofs. Roughly the yearly premium on the latter is more than for 5 years on buildings with prestressed roofs. Though this is a comparison of extremes, it is indicative of how prestressed construction is regarded by insurance companies.

### 10. Economy of Maintenance

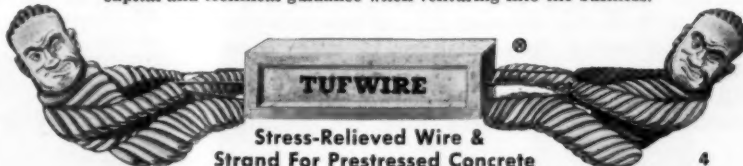
- A. Even in marine construction or in construction subjected to other extreme corrosive conditions, the cost of maintenance on prestressed concrete construction ranges from nil to the expense involved in painting in cases where color is desired.

### 11. Widely Competitive

- A. The initial cost of prestressed concrete is such as to enable its prefabricators to successfully bid against the permanent, fire resistant, all-weather types of construction in many types of structures.

- B. When the collateral economies effected by prestressed concrete, such as greater and more flexible strength for longer spans and fewer columns, balanced stresses and strains and controlled deflection, thinner sections, lower depth to span ratios, lower wall heights and increased usable cubage, ready availability, speedier erection, negligible maintenance and lower insurance premiums are considered, then the competitive edge is definitely on the side of prestressed concrete for a growing list of structures.

So goes the summary of the thoughts of a panel of pioneers except for a warning which was sounded: Be sure of adequate capital and technical guidance when venturing into the business.



Stress-Relieved Wire &  
Strand For Prestressed Concrete

**union Wire Rope corporation**

2306 Manchester Avenue

Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand.

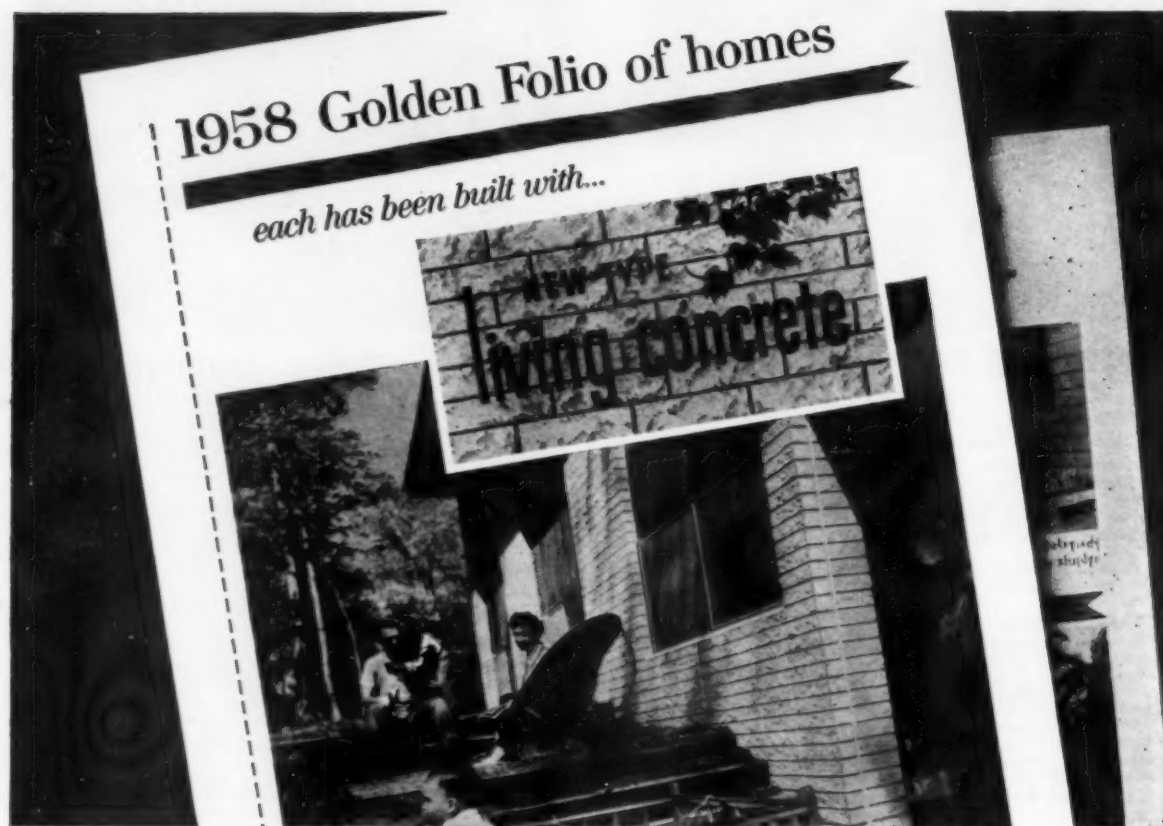
SUBSIDIARY



STEEL CORPORATION

Kansas City 26, Missouri

# Biggest advertisement ever to dramatize concrete masonry!



## 4 consecutive full pages, full color, in the nation's top "home" magazines!

Next month, in *Better Homes & Gardens*, *House Beautiful*, and in *House & Garden*, millions of Americans will see concrete masonry in its modern role—beautiful, appealing, designed for gracious living.

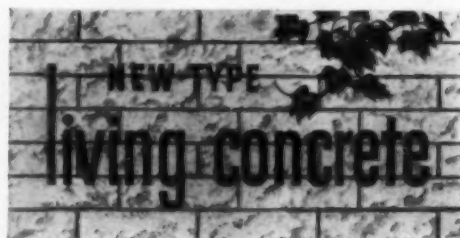
An impressive 4-page folio tells the story of today's new forms of concrete masonry . . . its new patterns, textures and colors . . . how it fits every taste, any home style or locale.

All the versatility of today's concrete masonry, all its warmth and charm for modern living, the advertise-

ment projects into a descriptive, promotable idea—*new-type Living Concrete*. You'll be hearing more about this idea. For nationwide, *Living Concrete* is gaining favor with important architects, builders, financial people, as well as with home buyers.

### PORTLAND CEMENT ASSOCIATION

*A national organization to improve and extend  
the uses of concrete*



News Announcements from Companies  
Servicing the Concrete Industries

## MANUFACTURER'S NOTES

Austin K. Thomas has joined **Blaw-Knox Company** as general manager of the construction equipment division. In his newly created position with Blaw-Knox, Mr. Thomas will have responsibility for sales, market planning and advanced engineering of the company's line of construction and road building equipment. A native of Frederick, Md., Mr. Thomas holds a degree in civil engineering from Cornell University, class of 1925. He has devoted his entire business career to the field of construction and related equipment. This includes nine years prior experience, 1926 to 1935, with Blaw-Knox as service and sales engineer of construction equipment, two years with the Pennsylvania Highways Department and four years with a construction equipment distributor. For the past eighteen years he was in various sales and management capacities with a construction equipment manufacturer.

**Erickson Power Lift Trucks, Inc.**, Minneapolis, Minn., announces the recent appointment of **James A. Kraker** as general sales manager. He will have responsibility for coordination of sales and advertising activities, especially in relation to expansion of sales and service facilities. Mr. Kraker's background includes eight years experience with both Clark and Hyster materials handling equipment and three years experience in mortgage loans and real estate brokerage. During this time he filled positions ranging from salesman to management to dealer ownership. Erickson was established twenty years ago and pioneered the use of fork lift and platform trucks in the concrete block field.

The **Fairfield Engineering Company**, Marion, Ohio, has appointed **Victor Berg** of Dunellen, N. J., as its eastern district manager. He will be in charge of all construction equipment sales on the east coast and will also act as a consultant for all Fairfield dealers on problems relating to concrete batching plants. For the past fifteen years Mr. Berg was manager of the truck mixer division of Worthington Corporation.

**Memphis Equipment Company**, Memphis, Tenn. truck distributors, have recently purchased the **H. B. Slaughenhaus Co.**, of Chambersburg, Pa. and will operate an Allegheny branch at the Chambersburg location, for the distribution of Army trucks, parts and construction equipment. Both the Memphis office and the Allegheny branch will stock a complete line of Army all-wheel drive vehicles including the GMC 2½ ton 6 x 6; International 2½ ton 6 x 6 and the Autocar four ton 4 x 4 Army truck. **Charles E. Bailey**, Memphis, has been appointed Allegheny branch manager.

Two new sales, parts and service dealers for FWD transport tractors and ready mixed trucks have been announced by **Four Wheel Drive Auto Co.**, Clintonville, Wis. They are **George Bock Company**, 2231 Central Ave., Dubuque, Iowa, and **Silver Eagle Company**, 57th and St. Helens Road, Portland, Ore. Bock will handle Clayton, Delaware and Jackson counties in Iowa, Grant and Lafayette counties in Wisconsin and Jo Daviess county in Illinois. Silver Eagle's territory



A. K. THOMAS



J. A. KRAKER



V. H. BERG



includes all of Oregon plus Cowlitz, Clark and Skamania counties in Washington. Both dealers will handle FWD's complete line of four- and six-wheel drive transport tractors and six-wheel drive ready mixed concrete trucks.

**Tamms Industries Co.**, whose general offices are in Chicago, announce the occupation of their new plant on U. S. Highway 66, south of 47th. St. in McCook, Ill., a Chicago suburb. The new plant has approximately 40,000 sq. ft. of floor space.

The **Portland Cement Association** announces the appointment of Walter C. Oram as paving engineer of its Rocky Mountain regional office at Denver. Mr. Oram joined the association in 1952 as special assignment engineer in the highways and municipal bureau. Since March, 1955, he has served as general field engineer in the Seattle district office. Mr. Oram is a member of the American Society of Civil Engineers, the National Reclamation Association and the Associated General Contractors of America.

**Chain Belt Company**, Milwaukee, Wis., has acquired 92 acres of land in Madison, Ind., to provide additional manufacturing capacity for its heavy machinery lines. The site was chosen because of its commercial transportation facilities and its central location in relation to certain market areas. Construction of a new plant building is expected to start shortly. The new plant will permit consolidation of Chain Belt's present manufacturing operations now located in Niles and Newton Falls, Ohio, and Rock Island, Ill.

**Pick Manufacturing Company**, West Bend, Wis., has appointed McGill-Brown, Inc. of Des Moines as its representative for the sales and service of Pick steam injection water heaters to industrial users. Distribution will be under the direction of Darl Hatfield, sales manager of McGill-Brown.

The establishment of a new consulting service on the manufacture of plant cast, prestressed concrete products has been announced by A. G. Streblow, president of the **Basalt Rock Company** of Napa, California. This new service is designed to aid concrete manufacturers in entering this field, by avoiding costly mistakes which often accompany such expansions. Basalt Consultants will cover every phase of the business, including such basic problems as plant design to satisfy marketing designs of the particular area, and selection of products and shapes to be manufactured. In addition, the new Basalt service will supply technical assistance, training, engineering and plant personnel, provide engineering data and test results and make available technical literature with proven use details. One of the pioneer firms in the manufacture and development of plant cast, prestressed structural concrete products, the Basalt Rock Company has been actively engaged in research, development and promotion of these products in Northern California for the past six years.

John Nash has been appointed sales manager of the Progress and Monitor Boiler division of **Cleaver-Brooks Company**, Milwaukee, Wis. He succeeds Robert E. Sullivan, who is to head the Cleaver-Brooks sales agency in the Cleveland territory. Mr. Nash was formerly sales manager of Petroleum Heat and Power Co., Chicago.

Formation of a six-man Dunn Drain Tile Manufacturers' Executive Committee is announced by Norman A. Dunn, president of **W. E. Dunn Manufacturing Company**, Holland, Mich. Committee headquarters will be in Holland. Purpose of the committee, Mr. Dunn says, "is to serve as a sounding board for industry policy, to exchange ideas for the benefit of all Dunn drain tile manufacturers and to promote increased use of concrete drain tile." Men who will serve on the Committee are: Claude E. Siegel, Flora Concrete Tile Co., Flora, Ind.; Richard J. Hews, Yakima Cement Products Co., Yakima, Wash.; J. Carl Harmon, Harmon's Concrete Products Co., Pontotoc, Miss.; Dewey Byrd, Byrd Block &

Tile Co., Roaring River, N. C.; R. M. Shurtz, California Septic Supply, Modesto, Calif.; John Krause, Riverside Dunn Brick Co. Milwaukee, Wis.

**Hayward Heubeck Company**, 1101 N. Payson St., Baltimore 17, Md., has been named sales representative for Maryland, Virginia and the District of Columbia, for **Landers-Segal Color Company**, Brooklyn, N. Y. They will have charge of sales of Lansco cement and mortar colors to manufacturers of concrete products and building material dealers.

John T. Hughes has been appointed sales manager, New York sales territory of **Universal Atlas Cement Company**. He succeeds William J. Plant who is retiring after 42 years of service with the company. Mr. Hughes joined Universal Atlas' Boston sales office in 1946 as a salesman and in 1955 was appointed assistant sales manager for the New York territory.

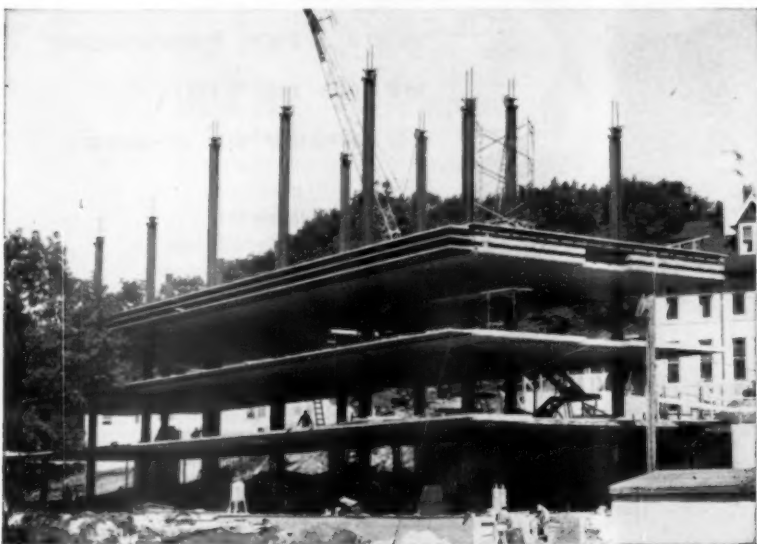
Formation of the **National Brikcrete Advisory Board**, with headquarters in Chicago, has been announced by Frank R. Short, executive secretary. Objectives of the board are described as intended to promote the use of concrete products and serve in the best interest of all Brikcrete manufacturers. Members of the board are: Jack H. Munro, Indianapolis Brikcrete & Builders Supply Corp., Indianapolis; J. E. Adams, Renton Concrete Products, Inc., Renton, Wash.; Louis J. Canteke, Jr., Texas Brikcrete Mfg. Co., Houston; Charles L. Holloway, Holloway Construction Co., New Orleans; and Charles F. Folmar, Pensacola Brikcrete Co., Pensacola, Fla.

Paul W. Ruth, Jr., has been appointed sales representative in northern Indiana for **Marquette Cement Manufacturing Co.** Mr. Ruth was formerly with the Studebaker-Packard Corp., in South Bend.

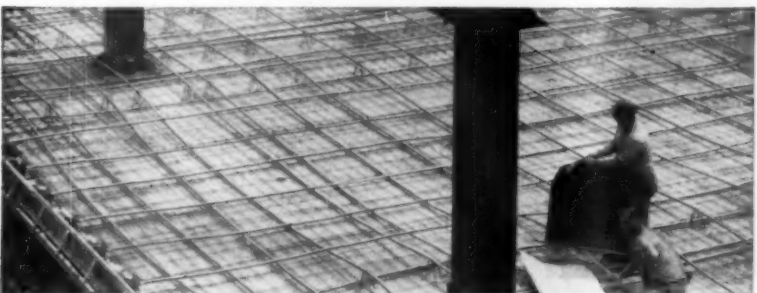




**SIXTH SLAB IN PLACE:** Guy wires attached to slab corners and anchored to concrete deadmen stabilized building during lifting operation. Sherwood, Mills and Smith, Stamford, Conn., architect; New England Lift Slab Corp., Boston, Mass., contractor. Concrete prestressing by A. F. Peaslee, Inc., Hartford; The Freyssinet Co., New York City, consultant; Marchant and Minges, West Hartford, Conn., structural and mechanical engineers.



**FIRST STAGE LIFTING** raised upper three slabs to tops of 35' columns. Then, lower three floor slabs were raised to position. Next, columns were extended 25', after which upper three slabs were raised to permanent position.

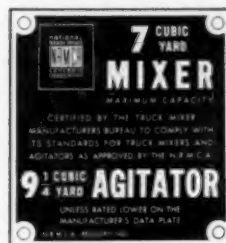


**TRANSVERSE AND LONGITUDINAL** prestressing cables for slabs consisted of ten 0.196" dia. wires in 1-1/4" dia. flexible sheathing. Tendons are draped in vertical plane to vary pre-stress in floors and roof.

## New low cost method raises 6-story lift slab

A NEW METHOD of pinning collars to the columns cut welding time and brought lifting cost down to 37 cents per sq. ft. in the 62' high addition to Litchfield County Hospital, Winsted, Conn. Its 5 floors and roof are prestressed concrete lift slabs. After slabs were raised to correct height, 1 3/4" pins were inserted through the column flanges and through 1 1/4"-thick shear blocks which were later welded to the inside of the flanges. Steel wedges, driven between the tops of the collars and the columns, provided a rigid connection. Finally, pinned shear plates were welded to the undersides of the collars. Column erection and lifting took 4 1/2 weeks.

Concrete slabs were cast and prestressed at ground level. The five floor panels measured 182' x 43'; the irregular shaped solarium roof, 80' x 41'. All were 8 1/2" thick, requiring total of 1112 cu. yds. of specification concrete having a 28-day compressive strength of 4,500 psi. This was properly processed and delivered in 6 pours by truck mixers of certified design, capacity, mixing speed and water control accuracy.



You have a right to insist on this Rating Plate. It certifies compliance with the high industry standards maintained for your protection by the Truck Mixer Manufacturers Bureau.

**BLAW-KNOX CONSTRUCTION EQUIPMENT DIV.**  
Mattoon, Ill.

**CHAIN BELT COMPANY**  
Milwaukee, Wis.

**CHALLENGE MANUFACTURING CO.**  
Los Angeles, Calif.

**CONCRETE TRANSPORT MIXER CO.**  
St. Louis, Mo.

**CONSTRUCTION MACHINERY CO.**  
Waterloo, Iowa

**THE JAEGER MACHINE COMPANY**  
Columbus, Ohio

**THE T. L. SMITH COMPANY**  
Milwaukee, Wis.

**WESTINGHOUSE TRANSIT MIXER DIV.**  
Indianapolis, Ind.

**WHITEMAN MANUFACTURING CO.**  
Pacoima, Calif.

**WILLARD CONCRETE MACHINERY CO., LTD.**  
Lynwood, Calif.

**WORTHINGTON CORPORATION**  
Plainfield, N. J.

"takes it" as fast  
as you  
can "dish it out"!



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MEANS NO LIMIT  
TO SPEED OF CHARGE**

Only the phenomenal  
Smith Turbine-Type Mixer  
has a full 360° charging area.  
*Whatever the speed of your charge —  
that's the rate this mixer accepts it!*

*Discharge is just as fast:*  
the mixer is available  
with up to four discharge doors,  
depending on requirements.

*But that's not all  
to the story of speed.*  
Because of "Live Mix"  
(no dead center area)  
mixing is at a peripheral rate  
of 600 feet per minute!

Mixing is done in a doughnut-shaped drum.  
Blades set up a braiding action  
which breaks down centrifugal forces.

For detailed data  
write giving your type  
of application.



*Since 1900, the pioneer designer and foremost manufacturer of the world's finest mixers.*

**THE T. L. SMITH COMPANY • Milwaukee, Wisconsin • Lufkin, Texas**  
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## THE EDITOR'S PAGE

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DOUGLAS LEE

### Want to Help Write a Dictionary?

We're hoping for at least a twofold result to come from publishing the NCMA Glossary of Concrete Masonry Terms in this issue of CONCRETE, beginning on page 29.

Initial distribution of the Glossary by NCMA was to its membership. Our publication of it, with NCMA's approval, should materially increase the number and variety of comments and suggestions the NCMA seeks before publishing a final version. All producers and others interested in concrete masonry in our reader audience are invited to submit their ideas for improving the present text and content of the Glossary direct to the association.

Our secondary reason for publishing this Glossary is that we hope it will suggest to other groups in the concrete industries the importance of compiling similar works covering their fields of production. Who knows but that some day we might have a dictionary covering the entire field of concrete.

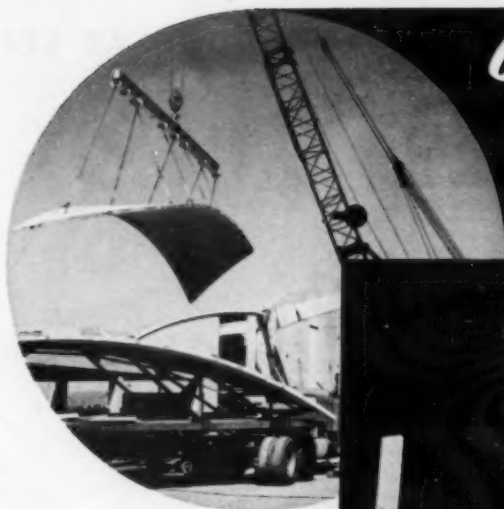
As publishers of a trade journal, we could certainly use one. Certainly, builders, contractors, architects and engineers would find their work in concrete and concrete products considerably aided by the availability of a standard reference work of this kind. It would make designing with our materials and the specification and ordering of our materials a simpler and more accurate task.

Also, such a work would simplify the job of advertising agencies, public relations firms, editors of newspaper and magazine building sections and others whose activities are often concerned with the use of concrete and concrete products.

Most important, perhaps, would be the advantages provided by such a dictionary to producers and their personnel in concrete and concrete products plants. Particularly would such a work be valuable to new people in the plants who would have a convenient source of definitions for such strange terms as fineness modulus, pozzolanic action, modulus of elasticity, and the colloidal theory of hardening.

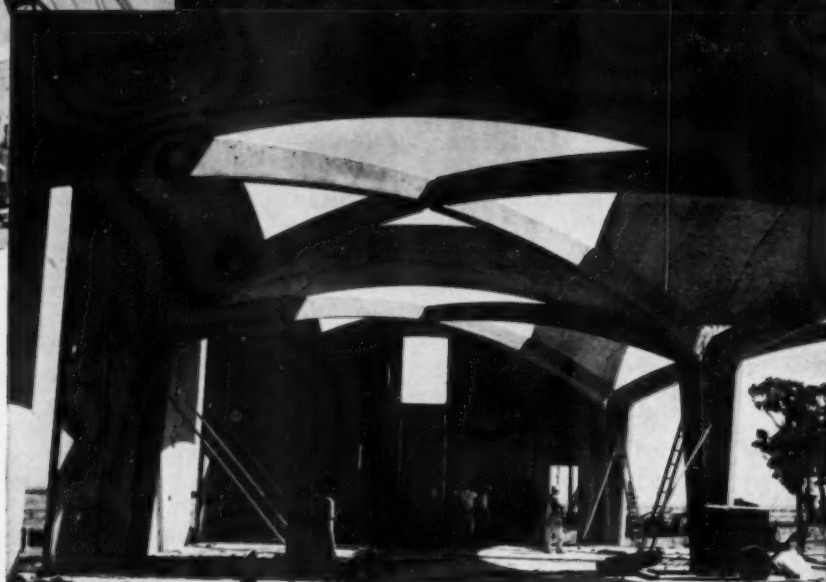
The concrete industries are building a science. And one of the first requisites of a science is precision — precision of terminology included.

# **BASALT ROCK COMPANY ANNOUNCES A "CONSULTING SERVICE" to the Prestressed Concrete Industry**



*Get a bigger slice of  
the Construction Dollar!!!*

EXPAND YOUR CONCRETE PLANT to produce plant cast, prestressed structural concrete products to meet the demands of this fast growing market.



## **START RIGHT!**

Our consulting service is designed to prevent costly mistakes from the beginning. Our six years' experience in plant design and production can provide you with efficient operation right from the start.

## **WHAT WE WILL DO FOR YOU:**

1. We will consult with you on the design of a plant to meet the needs of your market area.
2. Consult with you on the selection of products and shapes to be manufactured.
3. Provide experienced manufacturing "know how."
4. Train your key engineering and plant personnel.
5. Supply engineering data and test results.
6. Make available technical literature with proven use details.

**PLUS many other services to get you started THE RIGHT WAY!**

Write or telephone us today for our prospectus explaining our Consulting Service.



**BASALT ROCK COMPANY, INC.**  
NAPA, CALIFORNIA • Telephone BALDWIN 6-7411



## Cover Picture

The last sections of an order for 3,458 bridge girders for the 187-mile Illinois Toll Highway have been cast at the large prestressing plant of Material Service Corporation at Algonquin, Ill. Now these girders are being placed in 121 bridges along the toll road.

Over 219,000 linear ft. of girders, besides other sections, have been manufactured for the toll highway by Material Service. 1,800 miles of steel strand, enough to extend from Chicago to Phoenix, Ariz., were cast inside these prestressed concrete members. The work required more than 100,000 tons of concrete. Produced during an 11-month period by a 200-man crew, the girders range in length from 40 to 92 ft; in height from 3 to 5 ft. Individual girders weigh as much as 96,000 lbs.

Six 607-ft. casting beds are used at the plant, each equipped with an end anchorage abutment capable of withstanding a horizontal force of over 2,000,000 lbs. A testing laboratory is also on the 250-acre premises.

In producing bridge girders at the Material Service plant, as many as 79 lengths of 7/16-in strand were placed within the forms. Four rows of 10 reels of strand had been installed at each end of the casting beds, making it possible to place varying numbers of strand within the forms. Tensioning, to 175,000 lbs. per sq. in., was accomplished by four 300-ton hydraulic jacks. Hold-down devices and 50-ton jacks along the beds were used to place some of the strand in a catenary curve along the tensile path. This balances the dead load moment against the upward bending moment due to the prestressing force.

Capacity of the plant for girder production is more than 1,100 linear ft. daily. Over 52,000 sq. ft. of 2½-in.-thick prestressed deck planking has also been produced at the plant for the toll highway. Plank units are 4 to 6 ft. in length.

Prestress concrete bridge girders and deck plank were designed for the Illinois State Toll Highway Commission by Joseph K. Knoerle & Associates, Inc., consulting engineers. Casting beds for the Algonquin plant were designed by Material Service Corp. engineers, assisted by T. Y. Lin and Associates, consulting engineers, Berkeley, Calif.

To maximize cost savings for the  
(Continued on page 28)

# 3,458 Bridge Girders Cast



## Have Plant, Will Pour



● Material Service Co.'s plant stretches on and on, and still on further.

# Labor, Fuels, and Merchandising Draw RM Producers to Cleveland

**T**he Ohio Ready Mixed Concrete Association at the Cleveland meeting in June, this year, celebrated its 20th anniversary. And Claude Clark, secretary, and with the association since its founding, likewise celebrated a 20th anniversary.

But this didn't deter the Yanks from beating the Cleveland team the night of the Ohio Ready Mixed Association's annual outing. Not pausing for any anniversary celebration, the Yanks just went on from a slight lead gained in the first inning with two home runs to win with a score of 3 to 2.

Moving up into the spot of president of the Ohio Association for the coming year is E. E. Osborn, general manager, Clinton Construction Company, Wilmington. (Mr. Osborn is also serving a term as 2nd vice president of the Ohio Concrete Block Association). He took over the gavel from R. W. Ochsenhirt, Botzum Brothers Company, Akron. Lee L. Huth, Massillon Washed Gravel, was elected vice president. The two officers retained in the same capacity from the previous year are Claude Clark, secretary, and Ralph Ander-

son, Anderson Concrete Corporation, Columbus, treasurer.

The three new directors are R. W. Ochsenhirt, retiring president; Roger Perkins; and Joe K. Horne.

## Labor and Labor Negotiations

Probably the most frequently discussed area of business interest during this year's annual meeting was labor. At least three of the speakers on the program, Claude Clark, James A. Nicholson, and Vincent Ahearn, touched on this facet of a ready mixed producer's business.

One of the main subjects Mr. Clark stressed in his annual report was the work going on in Ohio relative to getting "right to work" legislation on the ballot in November. He said that the only way to get a sufficient number of signatures (some 354,000 of them are needed in Ohio) was for all persons interested in such legislation to go out and help fill up the more than 15,000 petitions now being circulated. And further, he asked association members to help with contributions, and then, in November, see to it that interested persons go to the polls.

In line with November elections, Mr. Clark made the additional point that it would be wise for producers to get out, meet, and talk with the candidates now. After they're in office, it becomes considerably more difficult to reach them.

James A. Nicholson, chairman of the association's labor committee, broadened the picture of labor negotiations, this year, to include what's happening or what has happened in some of the areas outside Ohio. He mentioned that though the ready mixed industry in Detroit is close to being on its heels from lack of business, the teamsters recently won a three-year contract with increases totalling 43 cents, spread over this period.

He praised producers of building materials in the Milwaukee area. There, 25 manufacturers and suppliers joined together to present a combined front against demands of union bargaining representatives.

In Ohio, and particularly in the Toledo area, he felt a similar united front had made headway; they achieved a better contract. This year management, backed by a good labor lawyer, approached the bargaining table better prepared; facts and information had been gathered to substantiate management's position. And further, the companies were unwilling to sign just any contract placed before them so that they could continue on with production. It was just such a condition of acquiescence to union demands in the past that shoved some metropolitan area producers into their present tough competitive positions. The present union scale in the Toledo area, specifically, is close to \$2.70; while nearby companies, in a position to deliver into Toledo, are paying only \$1.50, according to Mr. Nicholson.

Vincent Ahearn, executive secretary of the National Ready Mixed Concrete Association, in his "Washington Report," was another speaker who went into the subject of labor and labor negotiations. Many of Mr. Nicholson's views were re-emphasized by Mr. Ahearn.

Group bargaining is essential, he said, quoting the statement of Ben Franklin, "We must all hang together or assuredly we shall hang separately." And bargaining, Mr. Ahearn feels, should be a yearly task, rather than one that's faced only at the expiration of a contract. The past practice of giving more just to gain peace is what, he believes, brought on the high wages.

Mr. Ahearn mentioned that Detroit producers were not alone in signing a contract granting large wage boosts



● The facts and a united stand help in bargaining, says J. A. Nicholson.



● R. W. Ochsenhirt receives a plaque from his successor, E. E. Osborn. At right of stand is M. Eugene Sundt.

over the coming year. Others were: Syracuse producers who signed for a 40 cent increase over 2 years; New Jersey, 45 cent increase over 2 years; and New York City, 27½ cents for one year.

According to Mr. Ahearn, James Hoffa, head of the Teamster union, is going after such power that he can just send out contracts to employers with an "X" marked at the appropriate spot for the signature.

On the subject of any significant tax relief coming soon, Mr. Ahearn said he doubts it. What with a deficit of close to \$3 billion this fiscal year, and another approximately \$11 billion in fiscal 1959, he just doesn't see how taxes can be cut.

### Construction Forecast

Construction volume in 1958 he sees as about what it was in 1957. Home building will total out about the same as last year, 1,000,000 starts. The problem, Mr. Ahearn feels, is the increase in public works percentage wise of the total. In the past, public works has remained ap-

proximately 30 per cent of construction, with private funds making up the balance. This year, though, public works will account for 35 per cent of the volume; and, he said, in certain areas of public works construction the ready mixed industry plays little part in the picture.

Price wars? They're being fought in a number of areas, he said. And price schemes, besides being against the law, do not work too well, unless everybody wants them.

Of course the failings and political destiny of Sherman Adams took up a considerable portion of Mr. Ahearn's "Washington Report." His essential point, though, in discussing Mr. Adams, was what are we going to do about government and government employees? If people lose confidence in their governmental system, a number of possibilities — most of them distasteful — could result.

## Panel Discussion: Propane, Gasoline, Diesel Fuels



● Four panelists discussing fuels were (from left): William Jacka, Morris Avery, Ben Kester, and Thomas Mackin.

Four men discussed various aspects of fuels in use in the ready mixed industry, near the tail end of Wednesday's program.

The first panel member, William Jacka, Phillips Petroleum Co., took up some of the properties of LP-Gas vs gasoline (Propane or mixtures of propane and butane are the most common engine fuels of the LP-Gas group. Although pure butane may be used in warmer climates, it is not too satisfactory as an engine fuel in Ohio; its boiling point is relatively high, 32°F., with the result that in cooler months it remains in a liquid state, without pressure, in the fuel tank).

LP-Gas, gasoline, and diesel fuels

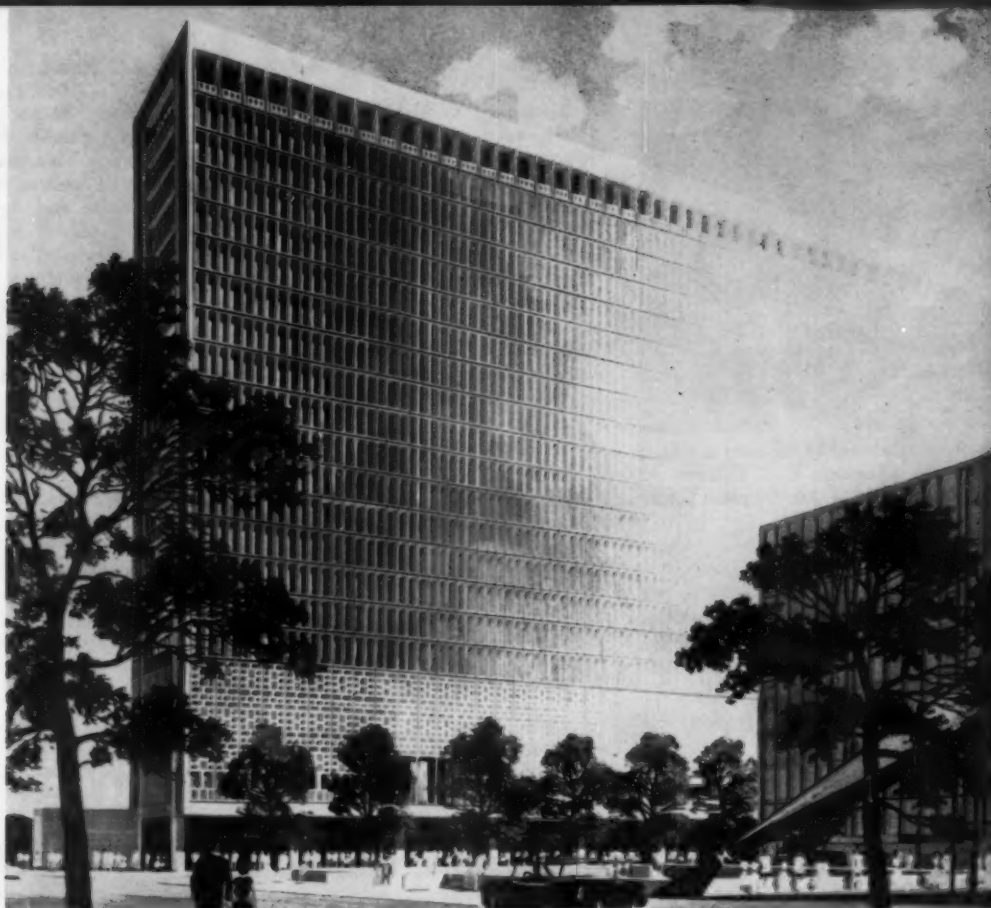
all have their place; but LP-Gas has some definite advantages for use in the ready mixed industry, believes Mr. Jacka. It burns completely; there is no dilution of the oil, with the result that fewer oil changes are necessary; it gives good idling operation; and since combustion is complete and there are no additives, such as lead, in the fuel, fewer engine deposits are formed, resulting in longer engine life.

LP-Gas, according to Mr. Jacka, has some operational problems, also, when used in the ready mixed industry; it requires a hotter spark for fuel ignition, resulting in harder starting on cold mornings; and too, a heated garage for storing vehicles

overnight may be necessary, particularly in colder climates.

Some of the problems in designing engines specifically for propane use were brought out by Morris Avery, Reo Motors Co. LP-Gas-burning engines can use a higher compression in the cylinders to compensate for the lesser number of heat units in the fuel. Also, because of high combustion temperatures, alloys of steel with a high melting point should be used in valve seats and valves to reduce wear. These two factors contribute to the increased cost of a propane-burning engine over a gasoline engine, but the main items increasing the

(Continued on Page 28)



● This 20-story Denver structure will be faced with 4,000 precast window-frame wall panels.

## Building Faced with 4,000 Precast

By

**TRUMAN SPARKS**

A precast window frame — wall panel combination will be introduced for the first time to the construction industry on a project soon to go up in Colorado. The shadow-box units, being produced assembly line fashion by Otto Buehner & Co. at Salt Lake City, will be incorporated into the Courthouse Square Development Center project in downtown Denver. In place, the units will form almost the complete wall and

window-frame face of the 20-story building.

Design plans call for casting 4000 individual members, each 9½ ft. high, 3 ft. high, 20 in. deep and weighing 3,600 lbs. Maximum allowable tolerances are limited to 1/32nd of an inch.

The Buehner plant is casting the members, for the most part, in double units with a false groove running down the vertical center line to present a uniform appearance. Some 7,500 tons of precast concrete are being poured to cover 455,000 square feet.

Four uniform exterior surfaces, composed of exposed granite pebbles showing the natural color of the rock, are presented by each unit. The pebbles, taken from the excavation

site at Denver, are screened and sized from a ¾-inch maximum down to sand size. No. 3 gauge wire, with a 4 x 4 in. mesh, is embedded in the units for reinforcement.

In place, the units will fit between the reinforced concrete floor slabs and will be anchored to the floor lines by means of metal brackets bonded into the backs of the frames. A single unit at alternating ends of the different floors will allow the double units to overlap for greater strength in construction.

The 20-in. depths of the frames are designed and shaped to shield the inside of the building from the sun's rays. This will minimize the need for air conditioning equipment to keep air circulating throughout the sealed interior. Windows, pinned







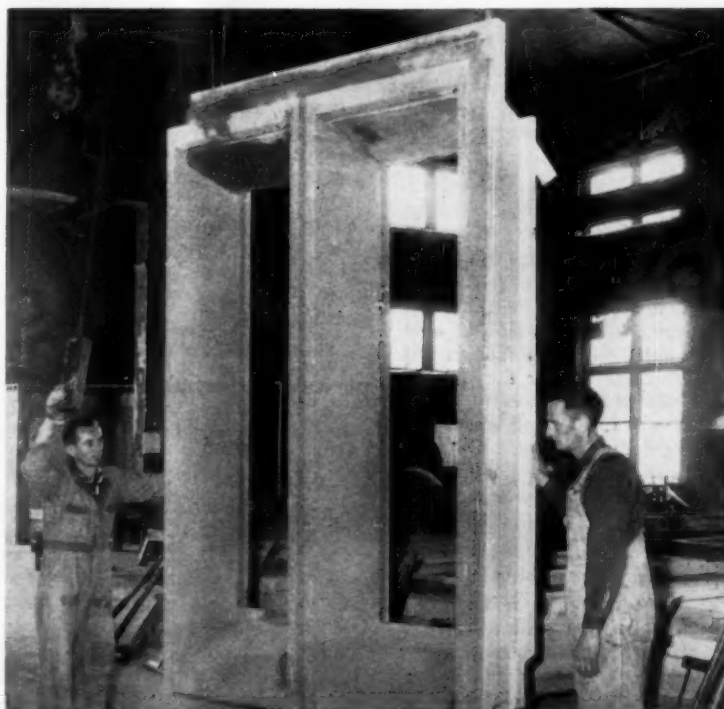
● The panels, now being cast, will be shipped from the Buehner's Salt Lake City plant to the Denver site.

## Window Frames

top and bottom at the center, need never be opened except for cleaning. This can be done from the inside, as the panes will pivot nearly 360 degrees on the pins.

Production, proceeding under direction of Oswald C. Wilde, superintendent at the Buehner Co.'s No. 3 plant in the Salt Lake City area, has averaged 10 of the double units per day.

Units completed during the early summer months were stockpiled at the company yards at Salt Lake City to be trucked to the construction site at Denver as needed. Installation is scheduled to get underway by late summer. Once installation is completed, the members will represent about 50 per cent of the work in the entire project.



● Most of the window-frame panels are being cast as double units.

# Merchandising

## Quality Ready Mixed Concrete

By M. EUGENE SUNDT

Presented at the Cleveland Meeting  
of the Ohio RM Concrete Association

**T**he subject of this talk is a little confusing. If the title was "Selling Ready Mixed Concrete", it might be less so, but the word "merchandising" and the word "quality" rather complicate the subject. What is merchandising? Many of us think of merchandising as synonymous with selling; I believe that merchandising involves a lot more than just selling. It involves creating the desire to buy. It may involve, in some lines of business, displaying merchandise in an attractive manner to create buyer interest. Ready mixed concrete would be difficult to display in an attractive fashion on the shelves of a store; but nevertheless, we must create the desire to buy.

### What is Quality?

Quality means class, kind, or grade. It can be good, bad or indifferent. Ready mixed concrete, too, can be good, bad or indifferent and, unfortunately, too often falls in the last two categories. For the purpose of this discussion, however, let us say that we are talking about the highest grade, or concrete of the highest quality. Here again the term is so vague that you have as many interpretations of "best grade" as you have people with whom you talk.

Let's break quality down into three different viewpoints: (1). the viewpoint of the engineer, (2). the viewpoint of the contractor, and (3). the viewpoint of the ready mixed concrete producer. The engineer is interested in concrete having the high-

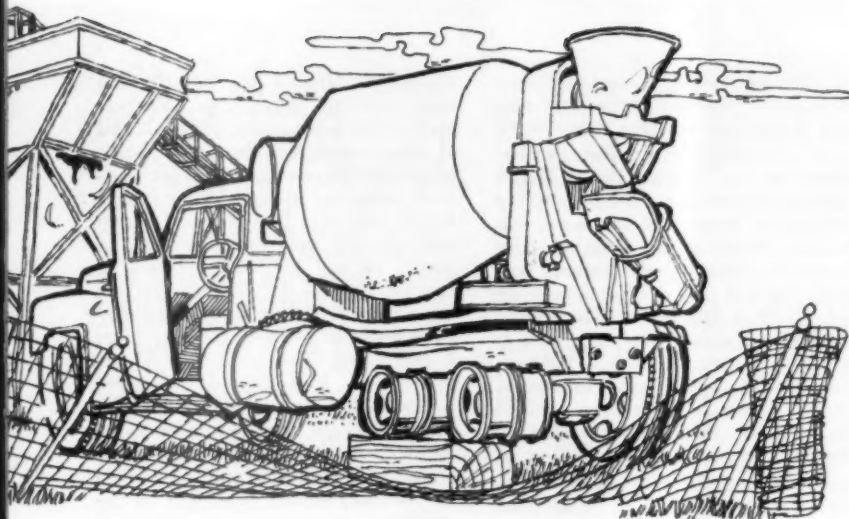
est durability; he is interested in concrete having uniformity of strength, the uniformity of strength being safely above the value he specifies for his work. He is interested in uniformity in the slump or consistency of the concrete as it is delivered to the job. Being interested in the durability and the strength of the concrete he specifies for his work, the engineer sets certain standards which he expects to be met by whoever pours the concrete. He may specify the water-ratio or the mix to be used; he may specify a certain type of cement; he may specify rigid requirements for the aggregates to be used; he may specify such things as maximum slump; or mixing and placing procedures. All of these things are rather easy for him to check on, even before the work starts. But, when the work is in progress, generally only two methods are used to check the quality of the concrete: the slump test for consistency, and the cylinder test for strength. These are the two gauges with which the engineer, and perhaps the customer, measure your reliability and set your reputation. If these tests vary, the engineer does not feel that you are giving him uniform high-quality concrete.

What is quality from the customer's viewpoint? To be sure, if the contractor is being supervised by an architect or an engineer, he expects you to deliver just what the engineer wants as long as it does not inconvenience him. He is more interested in concrete which places readily and finishes easily so that his labor costs may be kept at a minimum; and for

that, you can't particularly blame him. Yet, what one customer may consider good concrete may differ entirely from the viewpoint of another customer. Some contractors, and I presume that you have them too, expect to pour a home foundation from one corner and have the concrete wet enough to float the rocks around to the diagonally opposite corner. This is his idea of good concrete. Some cement finishers consider that the highest quality concrete is concrete that is wet enough that the rocks will sink to the bottom so that they don't have to tamp them down. This is their viewpoint on quality.

What about the Ready mixed concrete producer's viewpoint? I think that the ready mixed concrete producer's viewpoint on quality can be summed up as a definition which I shall call "Customer Acceptance of the Product". This is what the Ready mixed producer must have if he is to stay in business — customer acceptance of the product. In other words, here we have a wide variation in what is termed as "quality concrete", and the ready mixed producer must be prepared to deliver them all. He must be able to satisfy the engineer and still he must give the customer what he wants. After all, the customer pays the bills. Of course, we would not condone deliberate violation of an architect's specifications, nor would we assume the responsibility for doing so. Yet, if the customer orders something that is contrary to the architect's specifications, I think it is our responsibility to deliver to the customer what the customer wants. We may protect ourselves from this situation with such things as notations on tickets that water was added and that we, therefore, do not assume any responsibility.





● John, the fellow who runs this plant, told me the other night that sales are way, way down this year.

It would seem, then, that selling ready mixed concrete is one thing and merchandising "high quality" is something different. If we are to merchandise quality, we must, without offense to the customer, educate the users of our product as to what good concrete really is. We can't dictate what he should use, or tell him that what he is ordering is not suitable, but we must give more thought to customer education. The producer must satisfy both the engineer and the customer, and this creates about as many problems as there are individuals with whom we deal. We must create the desire to have concrete of the highest quality.

Two prerequisites the producer must be able to meet, before he is prepared to do a good job of merchandising quality, are service and uniformity of product. I place service first because if you can't deliver service, you can't sell quality.

#### What is Service?

Service is giving the customer what he wants when he wants it, and how he wants it. This is a big order, and we can't always do it, but we must try. This thing of service, then, takes teamwork and coordination, not only between the customer and your organization, but within your own organization. The taking of orders over the telephone is your telephone contact with the customer and is very important. The impression he receives when he talks to an order desk must be a favorable impression.

Dispatching is important. The dispatcher must have a good understanding of the job problems. He must realize that on some types of pours, he may be able to pull a truck out of the string to serve someone else; but on other types of pours

there must be a continuity to avoid a cold joint. He must use good judgment in making split-second decisions. One way in which we have tried to improve the judgment of our dispatchers is that we have on our payroll one more dispatcher than we actually need insofar as the dispatching is concerned. These dispatchers take turns so that each man will have at least one week per month out in the field circulating among the customers, seeing what the job problems are, and meeting the people with whom he has talked on the telephone. By doing this, the judgment of the dispatchers is improved and relations between the dispatchers and customers, as they talk to them on the telephone, is also improved. In our particular case, the dispatchers take orders as well as dispatch the trucks.

If we are to give good service, we must deliver the concrete promptly at the time promised. If we see we cannot keep our promise, we must make every effort to give advance notice to the customer, stating that, for reasons beyond our control, we are going to be late. By giving him notice, he may be able to have his men gainfully employed on something else until we can get there.

The equipment in which we deliver this concrete should be neat in appearance and well-maintained. As mentioned previously it would be difficult to display ready mixed concrete on store shelves in an attractive fashion to create buyer interest, but it is not difficult to keep your trucks and equipment attractively painted and provided with neat signs. This contact with the public is a big step in good public relations and good public relations are a step in merchandising quality. The equipment must be kept in good mechanical order because breakdowns enroute

to the job, on the job, or on the way back to the plant cost you money, delay your customer and constitute giving poor service. For this purpose, a good preventive maintenance program is a must. In our fleet, each truck comes into the shop at multiples of 300 hours for a checkup. Even a brand-new truck, at the end of the first 300 hours, will come into the shop for a checkup. These checkups become progressively more comprehensive as time goes on until, at the end of 3600 hours, we tear down the truck and mixer completely, pull the gears from the transmission box, tear down the differential housings and inspect all parts. If any parts show enough wear that we think they won't go another 3600 hours, they are discarded and replaced with new parts. When the truck is rebuilt, it is cleaned, repainted and new signs are provided. This keeps our fleet in pretty fair appearance and in good mechanical condition. I might mention that prior to the time we inaugurated our preventive maintenance program, our-on-the-job, or away-from-the-plant breakdowns were running about 15 breakdowns per 1000 hours of operation. Now, the figure for away-from-the-plant breakdowns is between 2 and 2-1/2 breakdowns per 1000 hours of operation. When I say breakdowns, it might be nothing more than dirt in the carburetor, but any call whereby a mechanic must leave the yard and go to the truck is logged as an away-from-the-plant breakdown. You may see that by reducing the frequency from 15 to 2, we have saved ourselves a tremendous amount of time in sending mechanics out in the field and also we have saved our customers considerable delay waiting on our trucks to arrive.

The mixer drivers are important



factors in delivering service. We stress that they be neat in appearance and, to this end, provide them with uniforms, at our expense, and take care of the laundering of the uniforms. We conduct monthly employee meetings for all employees. The emphasis is on safety and on courtesy, both on the highway or streets, and, perhaps more important, on the job we want no arguments with contractor's foremen!

The use of two-way radios is an important key to giving good service. With the two-way radios installed in mixer trucks, I feel that we will have one extra truck for every 8 in operation. In other words, if we have a fleet of 8 trucks, the installation of two-way radios in them will allow us to deliver as much concrete as would a fleet of 9. The dispatcher is able to keep in close contact with the job, to know when the job is being delayed and to know whether they need concrete faster than they are getting it. He can pull trucks from a slow job in order to service one that is taking concrete faster than originally anticipated. By means of the two-way radio, our drivers are encouraged to report any customer dissatisfaction to his dispatcher. If it is a situation that cannot be handled by the driver, the matter is then turned over to one of the salesmen, or to the dispatcher who is in the field. Someone will call on that customer just as quickly as we can get them there to try and smooth out any "ruffled feathers" before we lose the account. A salesman, or service man, should check the job before the pour is scheduled to be certain that the job is ready for the concrete. This helps you, and also improves service to the customer.

### Uniformity of Product

The second prerequisite to merchandising quality is uniformity of product. To secure uniformity in our product, we must first have uniformity in each ingredient that goes into our product. Secondly, we must have uniformity in our batching mixing, and transporting procedures. Those of us who produce our own aggregates are in a position to control all of the above factors except the cement itself. If we buy our aggregates, we can quickly test them and insist that we receive the quality of aggregate we want. If we exercise our power to control these factors (cement excepted), and still fail to produce a uniform concrete, we must answer two questions. First, is the water demand, or slump-producing property,

of portland cement a constant? Second, is the strength-producing property of portland cement a constant?

In January, 1955, the Board of Directors of the National Ready Mixed Concrete Association took steps to try to answer these two questions. An exacting study of five geographically separated brands of cement was made over a period of one year by the NRMCA laboratory. The results of this and subsequent researches is available to you in NRMCA Publication No. 76, which is an authorized reprint from Proceedings ASTM Volume 58, 1958, as presented at their 61st annual meeting in Boston.

To answer the first question, let me quote from NRMCA publication 76: "The rather good relationship . . . between water requirement of ASTM C 109 mortar and flow of constant water-ratio mortar suggests that there were real differences in mixing water requirements of mortar from shipment to shipment. . . . it is of interest to note that cements which produced low strengths also tended to have low slumps in fixed water-ratio concrete. Thus, if the water had been increased to provide a constant slump, as would be necessary under field conditions, strength deviations from the median would have been even greater than indicated."

To answer the second question, let me quote again: "Shipment-to-shipment variations in strength-producing properties of cements from five commercial sources were large in relation to the variations which could be attributed to testing differences.

"Differences in strength, as measured by tests of standard mortar, were reflected in the strength of concrete.

"The variability in strength for all five cement sources was sufficiently great to be of considerable importance in controlling the strength of concrete.

"The pattern of strength variations for a given source of cement was similar at all test ages. That is, samples which were low-testing at one age were also low at the other ages.

"This research points to the need for better control of the uniformity of cement production within individual sources."

I have seen other test data which indicated that it is possible for cement from a given mill to vary in its water demand, or slump-producing property, from 38 percent to 151 percent of the average for that mill. I have seen test data which indicated that the strength-producing property

of cement from a given mill may vary from 67 percent to 118 percent of the average for that mill. All of this cement met the requirements of the ASTM specifications for portland cement. If we deliver ready mixed concrete that varies in slump and strength between corresponding limits, we are criticized for lack of control. Present ASTM specifications for portland cement make absolutely no attempt to incur uniformity from a given mill. And until this is corrected, we must provide excessive safety factors in our mixes to safeguard strength, and we must make adjustments in our mixes to control slump. Regardless of the excellence of your aggregate; regardless of the excellence of your control measures, no concrete can be any better than the cement with which it is made, and no construction job can be any better than the concrete that goes into it. Maintaining a satisfactory degree of uniformity in concrete requires continual control and eternal vigilance.

### Merchandising

If we can provide satisfactory service, and if we can maintain a satisfactory degree of uniformity of product, let me talk now about some factors which may facilitate merchandising this intangible thing called quality. We should start first with the architects and engineers. They are the ones most interested in quality and should be the easiest ones to sell. You should know all the engineers and architects who write or might be writing specifications for your materials. Help them develop confidence in your organization. Keep them posted on any new developments in concrete, or new developments in design of concrete structures. Have them look up to you as a leader in your field.

Activity in public affairs will provide many valuable contacts for carrying this message of quality. Have your key personnel scattered in as many service clubs as possible. Support your Chamber of Commerce actively, and as generously as you can. Be active in charity affairs, both religious and fraternal. Support your Community Chest by giving freely of your time, and as freely as possible of your money. Associate memberships in your local AGC chapter and your local Home Builders Association will provide many additional useful contacts.

Good public relations may be fostered by a good safety program. You should designate some one man



to serve both as your safety engineer and your personnel man to foster both safety and good employee relationships. All of this helps to provide good contacts with which you may pursue your message of quality.

Advertising is another tool in merchandising. I break advertising into three categories. Institutional, special purpose, and advertising-novelties or give-away gimmicks. Institutional advertising, I am told, is of value for keeping your name before the public so that when they have need for your products, they think of you first. One of the things which we have used are billboards on which we invite everyone to make our company their "concrete headquarters".

On the radio, early each morning, we have used a summary of construction weather conditions for the day, predicting lows and highs and, in cold weather, predicting the time when the temperature will rise above 40°; whether there will be high winds or not; and other items of weather interest to the builder if he is placing concrete. We run a newspaper advertisement each week. We run advertisements in local engineering and contractor's magazines. Good-will advertising, too, should come under this heading of institutional advertising; such things as contractor's mailing pieces, advertisements in religious and school publications, Air Force special editions, American Legion special editions. And we receive countless other requests for an advertisement; I think we are on everybody's sucker list.

Special purpose advertising is something of which we do very little. I think it would be useful if you have developed a new product that you want to get on the market, or a new service you've instituted and want to let the public know about. It also might be useful if you're reaching for some market in which you have not been active, such as a farm or rural market, or the backyard builder who may be putting in a fish pond or a private swimming pool.

Under advertising novelties or give-away gimmicks, I need to say very little, I am sure all of you have seen as many of them as I have. Some of the things that we use more consistently are: concrete calculator slide rules, mechanical pencils, and the old fashioned carpenter's wooden pencils which we pass out to job foremen or cement finishers, pen knives, little scratch pads with clip boards, matches, Zippo lighters, and cigars.

One of the most useful tools you can use in an advertising campaign is the advertising kit which was pre-

pared for our industry by the Portland Cement Association, and which is available for you to use simply upon a request directed to the Association. Most of you are probably familiar with it; but it gives you all the material you need, including mats and suggested copy for preparing almost any advertisement you might wish to run in a newspaper.

Nothing I have discussed so far will make a sale! You may be disappointed that I have said nothing about how to make an actual sale. I have purposely avoided this. I am not a salesman. Still, we must have salesmen, and the things I have talked about will help your salesmen do a better job and make their job easier. I leave the salesmen to the last, not because they are least important but because they are most important.

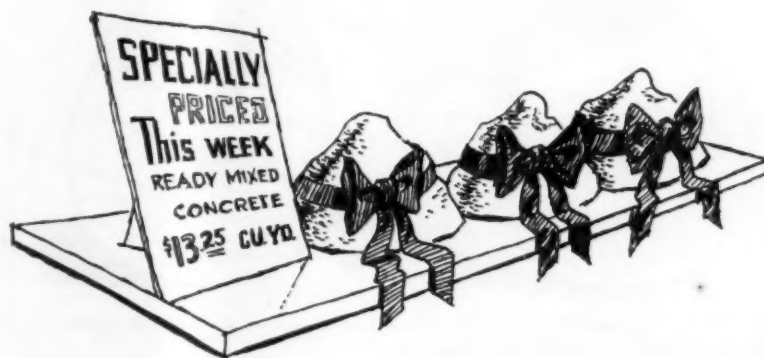
We furnish our salesmen with two-way-radio-equipped sedans or Ranch Wagons. These cars are not painted the company colors, nor do they carry the company signs. Our salesmen are on call twenty-four hours a day, and if they want to take a customer out in the evening we don't expect them to burn their own gas. If a salesman takes a customer out on a week-end fishing trip, we want him to feel free to use the company car, and we don't want it to be so conspicuous that he doesn't care to drive it when he is off duty. The salesmen must make regular contact with all of our customers or potential customers, both at their offices to contact the purchasing agents or the heads of the firm, but also on the jobs to contact the job superintendents, cement finishers, and the men who handle our product. We find that in many cases the office may leave the ordering of the concrete entirely up to the foremen on the job, and we must have him on our side. We ask our salesmen to report all customer complaints or dissatisfaction

so that we may try to take such measures as may be necessary to avoid future repetition of the same sort of thing. We ask the salesman to try to follow up those complaints personally if he can. It may be a case of a little insubordination on the part of a driver. In this case, there is nothing that the salesman himself can do; but by reporting it, the proper department head will follow it up.

In a small company it may not be feasible to have a serviceman who checks the job before the pour to see if it is ready for concrete and again during the pour to see that the concrete is arriving the way the contractor wants it, to see that there are no trucks stacked up on the job, and to see that the contractor is not waiting an undue length of time between loads. It might be advisable, however, to have the salesman do a certain amount of this service work by following important pours.

If we are to increase our sales we must never relax our efforts to improve the service we give. If we are to label our product "Quality Ready Mixed Concrete" we must leave no stones unturned in our efforts to control and improve the uniformity of each ingredient, including cement. We must have uniformity and accuracy in our methods of handling and batching each ingredient. We must have uniformity in our mixing and delivery procedures. If we are to raise our standards of quality, we must devise some means of educating our customers and their employees in proper methods of handling our product. Service and personal contact are probably our best sales tools and we must have our key personnel develop as many lines of personal contact as possible.

Our industry is a young but vigorous one which faces the promise of a bright future. We are at the helm of our own ship so where our destiny takes us lies in our own hands.



## Ohio Ready Mixed

(Article begins page 20)

cost are the LP-Gas pressure tank and vaporizer.

A producer's views of propane use were voiced by Ben Kester, J. P. Loomis Concrete & Supply Co., Akron. Mr. Kester said his company had used propane as a ready mixed truck fuel for more than a year, and were very satisfied with the results.

He said that LP-Gas-fueled units cost approximately \$500 more, according to his company's figures, but this initial outlay is offset by the lower cost of LP-Gas per gallon — propane in the Akron area costs 5 to 7 cents per gallon less than gasoline. A side advantage the Loomis Company found after the change over was they were using more LP-Gas in summer when propane almost goes begging; and in the winter, when LP-Gas demand is high by other users, the company's needs were substantially reduced.

Mr. Kester seconded the previous statement that less engine wear was

evidenced with propane as the fuel.

On the subject of oil change in LP-Gas engines, Mr. Kester noted that shortly his company was going to a policy of changing oil every 10,000 miles.

From a user's point of view, a disadvantage of LP-Gas, according to Mr. Kester, is that special containers must be used to haul extra fuel out to a truck that has run out of LP-Gas. And so to minimize costly service calls by the LP-Gas distributor, truck drivers have to pay special attention to their truck's fuel supply before leaving the plant.

The problem of starting the units on cold mornings was another disadvantage touched on by Mr. Kester.

For comparison, "Diesel Fuel in Transit Mixed Trucks" was the subject of the last panel member, Thomas H. Mackin, engineer, F. W. Slotter Co., Cleveland. His company's cost findings for repairs on units using this fuel were running a little over a cent a mile; also, the trucks were averaging five miles per gallon.

One disadvantage of diesel fuel

brought up was exhaust fumes. But while the fumes are more noticeable, they're less toxic or lethal than gasoline.

All in all, his company was pleased with diesel fuel's performance and economy, he said.

### Public Relations

Public relations, as expected, occupied a goodly bit of the platform time of speakers. Possibly the most significant unscheduled comment on this subject came from Lt. Bruce Umpleby, Ohio State Highway Patrol, who complimented producers for their safety programs.

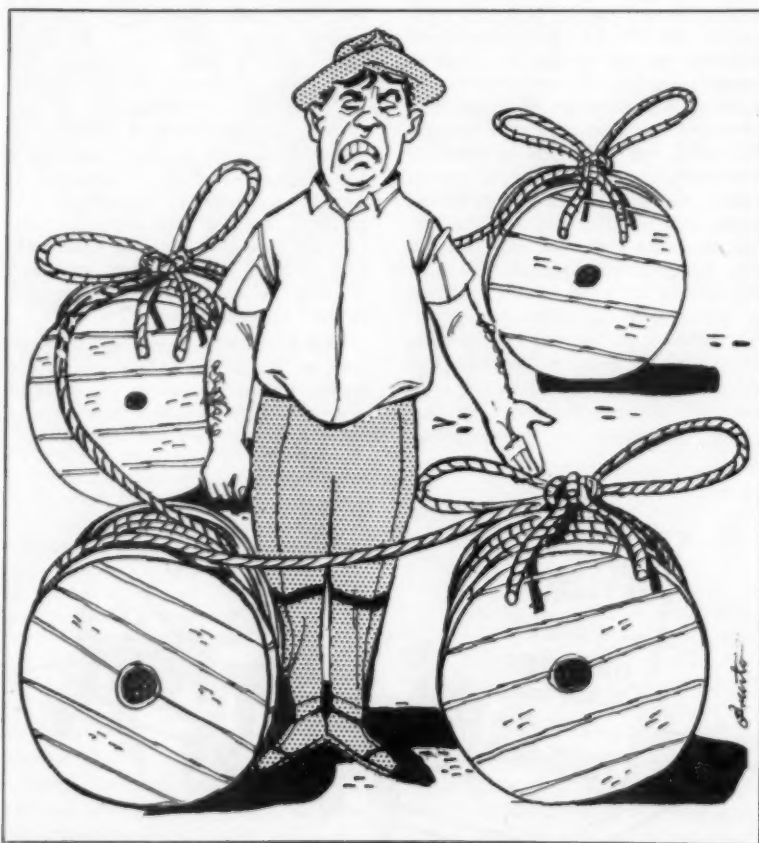
Roger Slugg, president of the Ohio Association two years ago, and chairman of public relations committee, noted the improved appearance of ready mixed units on the streets and how plant facilities were being cleaned up and painted. But the main portion of Mr. Slugg's time was devoted to detailing next year's Ohio ready mixed short course. Instead of the usual classes on concrete, the meeting next year, to be held Jan. 18, 19, and 20, will be a public relations and safety course for drivers of ready mixed trucks. Included on the program will be a visit to the Jaeger Machine Company and talks on such subjects as "What it takes to be a good driver," "safety programs," "how to conduct safety meetings," and "accidents and how to combat them."

This year's talk to the Ohio meeting by the president of the National Ready Mixed Concrete Association was on "Merchandising Quality Ready Mixed Concrete." The complete text of the speech by M. Eugene Sundt, Albuquerque Gravel Products Co., Albuquerque, N. M., begins on page 24 of this issue of CONCRETE.

## 3,458 Girders Cast

(Article begins page 19)

toll highway, and also for other governmental bodies and private concerns served, the Material Service plant, at Algonquin, is a fully integrated installation. Located 47 miles northwest of Chicago's Loop, facilities include a sand and gravel pit and a fully automated operation for processing materials. A ready mixed plant is used to deliver concrete to outside customers during the day and to the prestressing beds at night.



● My strand! . . . Who's the playful one?

# A Glossary of CONCRETE MASONRY TERMS

## SECTION I — MANUFACTURING

### RAW MATERIALS

**Admixture** — A material other than water, aggregates, and portland cement (including air-entraining portland cement and portland blast-furnace slag cement) that is used as an ingredient of concrete and is added to the batch immediately before or during its mixing. (1), (2)

**Accelerators** — Materials such as calcium chloride and compositions consisting predominately of calcium chloride which accelerate hardening and promote early strength development of concrete. (2)

**Air-Entraining Agents** — Materials such as sulfonated hydrocarbons and resin soaps used to entrain air in concrete to improve its workability or durability (2), (3)

**Pozzolan Materials** — Materials such as fly ash and pumicite which in themselves possess little or no cementitious value but which, in finely divided form and in the presence of moisture, will react chemically with calcium hydroxide at ordinary temperatures to form compounds possessing cementitious properties. (2), (4), (5) (Materials such as silica flour will react with calcium hydroxide at the elevated temperatures employed in autoclave curing to form compounds possessing cementitious properties.)

**Waterproofing Agents** — Materials such as those containing stearic acid or one of its soaps and esters which improve the impermeability of concrete by imparting internal water repellancy. (2) (Terms such as "dampproofing" and "permeability reducing agents" are also used to identify admixtures which render concrete more resistant to moisture penetration.)

**Workability Agents** — Materials such as hydrated lime, fly ash, finely divided silica, and air-entraining agents used to increase workability of concrete. (2) (Proprietary materials of this type are sometimes called retarding densifiers, accelerating densifiers, plasticizers, wetting agents, etc.)

**Aggregate** — Inert materials which when bound together with cementitious material and water forms concrete, mortar, or plaster. (6)

**Coarse Aggregate** — Aggregate which is predominately retained in the No. 4 sieve (sieve opening equal to 0.187 in.). (1)

**Dense Aggregate** — Aggregate which consists of gravel, crushed stone, or air-cooled iron blast-furnace slag, or a combination thereof. Unit weight of combined fine and coarse dense aggregate generally exceeds 65 lb. per cu. ft. (Also referred to as normal weight, heavy weight, or concrete aggregate.) (7)

**Fine Aggregate** — Aggregate which passes the  $\frac{3}{8}$ -in. sieve and is predomi-

nately retained on the No. 200 sieve (sieve opening equal to 0.0029 in.). (1)

**Fineness Modulus** — An empirical factor obtained by adding the total percentages of a sample of the aggregate retained on each of a specified series of sieves, and dividing the sum by 100. Sieve sizes applicable are:  $\frac{3}{8}$  in., No.'s 4, 8, 16, 30, 50 and 100. (1)

**Lightweight Aggregate** — Aggregate composed predominately of lightweight cellular and granular inorganic materials, and prepared as follows: by expanding blast-furnace slag, clay, diatomite, fly ash, perlite, shale, slate or vermiculite; by processing natural materials such as pumice, scoria or tuff; or by processing cinders. Unit weight of combined fine and coarse lightweight aggregate should not exceed 65 lb. per cu. ft. (8)

**Sand** — Fine, dense aggregate which results from either natural or manufacturing processes. (6)

**Cementitious Materials** — Materials such as portland cement, air-entraining portland cement, and portland blast-furnace slag cement which exhibit cementitious properties. (Other materials such as masonry cement, hydrated lime, and quicklime are also classified as cementitious materials for mortar.) (9)

**Air-Entraining Portland Cement** — A product obtained by intergrinding air-entraining additions with clinker consisting essentially of hydraulic calcium silicates. (10)

**Portland Blast-Furnace Slag Cement** — A product obtained by intergrinding a mixture of portland cement clinker and granulated blast-furnace slag. (11)

**Portland Cement** — A product obtained by pulverizing clinker consisting essentially of hydraulic calcium silicates. (12)

### CURING

**Atmospheric Pressure Steam Curing** — Steam or moist air curing at atmospheric pressure usually at maximum ambient temperatures of 120 F to 180 F. (Also referred to as low pressure steam curing.)

**Cooling Rate** — The rate at which the block concrete temperature decreases from the maximum attained during curing, while either in the kiln or immediately after removal from the kiln.

**Heating Rate** — The rate, expressed in degrees F per hour, at which the temperature of the kiln or autoclave is raised to the desired maximum temperature. (13)

The National Concrete Masonry Association has recently completed and released to its membership, under its "Technical Bulletin" series, a "Glossary of Terms Relating to Concrete Masonry."

Development of this glossary is only considered to be a preliminary step to aid in the future preparation of a final and more complete glossary. Considering the importance of this subject to all concrete block manufacturers and the association's wish to have as many comments or criticisms concerning additions, corrections or revisions as possible, we have secured permission from Mr. R. E. Copeland, director of engineering, NCMA, to broaden the distribution of this initial glossary through publication here.

For convenience and easy reference, the glossary has been divided into four sections: manufacturing; concrete masonry units; design and construction; and references. The numbers in parenthesis following some of the definitions pertain to the references which comprise the fourth section of the glossary.

We hope that the publication of this glossary will prove a useful addition to the file of working material of block producers throughout the country and we invite all readers having suggestions for improvement to forward them to Mr. Copeland at the association's headquarters, 38 S. Dearborn St., Chicago 3, Ill.



**High Pressure Steam Curing** — Any process of curing in saturated steam under moderate pressure, usually 125 to 150 psi. (Also referred to as autoclave curing.)

**Holding Period** — The period between the time doors are closed on a filled kiln or autoclave and the time steam (or additional heat) is first introduced. (Also referred to as the preset period.) (14)

**Kiln Temperature** — The dry bulb temperature of the atmosphere in the kiln (based either on the average of readings taken at several locations or at a single location at about mid-height of the kiln and where reasonably average conditions prevail.) (14)

**Moist Air Curing** — Curing with moist air at atmospheric pressure and a temperature of about 70 F.

**Soaking Period** — Period of time during which the live steam supply (or heated moist air supply) to the kiln is shut off, and the block are left to "soak" in the residual heat and moisture of the kiln.

**Steam Curing** — Curing with warm, moist air, the moisture consisting of water in the vapor phase (steam) and water in suspension (droplets). (14)

**Steaming (or Heating) Period** — The period during which steam (or additional heat and moisture) is introduced into the kiln to attain and maintain the temperature and moisture conditions required for satisfactory hardening of the concrete. (14)

## DRYING

**Artificial (or Accelerated) Drying** — The process of drying cured block with warm, dry air or other means at a relatively fast drying rate.

**Drying Period** — The period following the curing and soaking period during which the units are subjected to a drying atmosphere until the desired degree of dryness in the concrete has been obtained. (14)

**Drying Rate** — The rate at which moisture remaining in the block at the end of the curing period is reduced. (13)

**Natural Air Drying** — The process of drying cured block without any special equipment such as the drying which occurs in a covered storage area.

## SECTION II — CONCRETE MASONRY UNITS

**Note** — The term, concrete masonry units, refers to hollow or solid masonry units made from portland cement and suitable aggregates with or without the inclusion of other materials.

Concrete masonry units are often referred to by terms which indicate the type of aggregate which has been used in their manufacture; i.e., cinder block, lightweight block, etc.

## DIMENSIONS & PARTS

**Note** — In practice, the first dimension of a concrete masonry unit given represents the thickness; the second, height; and the third, length.

**Actual Dimension** — The measured dimension of a concrete masonry unit.

**Average Dimension** — The average of the corresponding dimensions of units of a sample taken at random from a shipment. (15)

**Core (or Cell)** — A hollow space within a concrete masonry unit formed by the face shells and webs.

**Face Shell** — The side wall of a hollow concrete masonry unit.

**Gross Cross-Sectional Area** — The total area of a section perpendicular to the direction of the load, including areas within cells and within re-entrant spaces unless these spaces are to be occupied in the masonry by portions of adjacent masonry. (Note — The gross cross-sectional area of scored units is determined to the outside of the scoring.) (16), (17), (18)

**Height** — The dimension measured at right angles to the direction of the thickness and length of a concrete masonry unit.

**Length** — The dimension measured between the ends of a concrete masonry unit. (Note — Usually the dimension of the concrete masonry unit which is parallel to the face or length of the wall.)

**Modular Dimension** — A dimension based on a given module; usually 4 in. in the case of concrete masonry.

**Net Cross-Sectional Area** — The gross cross-sectional area of a section minus the area of cores or cellular spaces. (Note — The cross-sectional area of grooves in scored units is not deducted from the gross cross-sectional area to obtain the net cross-sectional area.) (16), (17), (18)

**Nominal Dimension** — The dimension greater than the actual masonry dimension by the thickness of a mortar joint, but not more than 1/2 in. (16)

**Standard Dimension** — The manufacturer's designated dimension. (15)

**Thickness** — The dimension at right angles to the face of the wall, floor, or other assembly in which concrete masonry units are used.

**Web** — The cross wall connecting the face shells of a hollow concrete masonry unit.

## PROPERTIES

**Absorption (of a concrete masonry unit)** — The total amount of water absorbed expressed in lb. per cu. ft. or as a percentage of the dry weight. (18)

**Compressive Strength (of a concrete masonry unit)** — The maximum compressive load in pounds which a unit will support divided by the gross cross-sectional area of the unit in square inches. (18)

(Note — Where compressive strength is based on the net cross-sectional area, it should be specifically so stated.)

**Moisture Content (of a concrete masonry unit)** — The amount of water contained at the time of sampling expressed as a percentage of the total absorption. (18)

**Texture** — The surface effect or appearance of a masonry unit apart from its color.

**Volume Change** — Any change in volume due to any cause other than stress (such as moisture and temperature). (19)

## TYPES

**Beam (or Bond Beam) Block** — A hollow concrete masonry unit which has short webs or a channel in which horizontal reinforcement can be placed for embedment in grout or concrete.

**Bullnose Block** — A concrete masonry unit which has one or more rounded exterior corners.

**Catch Basin and Manhole Block** — Solid, curved, and battered concrete masonry units used in construction of catch basins and manholes. (20)

**Chimney Block** — Concrete masonry units designed for use in chimney construction (usually in conjunction with flue lining).

**Concrete Brick** — A solid concrete masonry unit, approximately a rectangular prism, usually not larger than 4x4x12 in. (16), (21)

**Control Joint Block** — Concrete masonry units used to facilitate construction of vertical shear-type control joints.

**Coping Block** — A solid concrete masonry unit for use as the top and finishing course in wall construction.

**Double Corner (or Pier) Block** — Concrete masonry units which have two flat or flush ends for use in pilasters, piers, or corner construction.

**Faced Block** — Concrete masonry units having a special ceramic, glazed, plastic, polished or ground face or surface.

**Filler Block** — Concrete masonry unit for use in conjunction with concrete joists for concrete floor or roof construction.

**Grade Block** — Concrete masonry unit for use in top course of foundation wall where the above masonry wall is of a smaller or greater thickness.

**Half Height Block** — Concrete masonry units which have a nominal height of 4 in.

**Header Block** — Concrete masonry units which have a portion of one side of the height removed to facilitate bonding with adjacent masonry such as brick facing.

**Hollow Block** — A concrete masonry unit whose net cross-sectional area in any plane parallel to the bearing surface is less than 75 per cent of its gross cross-sectional area measured in the same plane. (16), (22), (23)

**Lintel Block** — U or W shaped concrete masonry units for use in construction of horizontal bond beams or lintels.

**Metal Sash Block** — Concrete masonry unit which has an end slot for use in openings where metal sash is employed.

**Open-End Block** — Concrete masonry unit which has an end web removed to facilitate placing of the unit around vertical pipes or reinforcement.

**Partition Block** — Concrete masonry units which are usually 4 or 6 in. thick for use in construction of non-bearing partition walls.

**Patio Block** — Thin solid concrete masonry units for use in walks, terraces, patios, etc.

**Pilaster Block** — Concrete masonry units designed for use in construction of plain or reinforced concrete masonry pilasters and columns.

**Return (or L) Corner Block** — Concrete masonry unit designed for use in corner construction for 6, 10, and 12-in. walls.

**Shadow Block** — Concrete masonry unit with beveled face shell recesses which provide a special architectural appearance in wall construction.

**Sill Block** — A solid concrete masonry unit used for sills of openings.

**Silo Block** — Solid, curved or plane concrete masonry units for use in construction of concrete silos.

**Single Corner Block** — Concrete masonry unit which has one flat end for use in construction of the end or corner of a wall.



**Slump Block** — Concrete masonry units (produced so they "slump" or sag before they harden) for use in masonry wall construction.

**Soffit Block** — Concrete masonry unit for use in concrete floor or roof construction where a uniform ceiling texture is desired.

**Solid Block** — A concrete masonry unit whose net cross-sectional area in every plane parallel to the bearing surface is 75 per cent or more of its gross cross-sectional area measured in the same plane. (16), (24)

**Solid Top Block** — Concrete masonry unit which has a solid top for use as a bearing surface or in a top course of a wall.

**Splash Block** — A solid concrete masonry unit which is laid with its top close to the ground surface to receive roof drainage and carry it away from the building.

**Split Block** — Concrete masonry units with one or more faces having a fractured surface appearance for use in masonry wall construction.

**Stretch Block** — Concrete masonry unit which has flat or concave ends and is usually laid with its length parallel to the face of the wall.

**Three-Core Block** — Concrete masonry unit which has three cores (or cells).

**Two-Core Block** — Concrete masonry unit which has two cores (or cells).

**Wood Sash Jamb Block** — Concrete masonry unit which has an end recess for use in jamb of an opening.

### SECTION III — DESIGN AND CONSTRUCTION

**Ashtar Facing** — Facing of a faced or veneered wall composed of solid rectangular units usually larger in size than brick, having sawed, dressed, or squared beds, and mortar joints. (16)

**Ashtar Masonry** — Masonry composed of rectangular units usually larger in size than brick, and properly bonded, having sawed, dressed, or square beds, and mortar joints. (16) (Note — Ashtar masonry construction is also denoted according to its bond pattern which may be coursed, random, or patterned.)

**Backup** — That part of a masonry wall behind the exterior facing. (25)

**Base Course** — The lowest course of masonry of a wall or pier. (26)

**Batter** — Recessing or sloping a wall back in successive courses; the opposite of corbel. (25)

**Bed Joint** — The horizontal layer of mortar on or in which a masonry unit is laid. (25)

**Bond** — Tying the various parts of a masonry wall by lapping one unit over another. Also refers to the pattern formed by the exposed faces of the unit. The adhesion of the mortar to the units is also referred to as "bond." (25)

**Bond Beam** — A horizontal reinforced concrete or concrete masonry beam designed to strengthen a masonry wall and to reduce the probability of objectionable cracking.

**Bonder (or Header)** — A masonry unit which ties two or more wythes (leaves) of the wall together by overlapping. (16)

**Breaking Joints** — The arrangement of masonry units so as to prevent continuous vertical joints in adjacent courses. (25)

**Building** — A structure enclosed within a roof and within exterior walls or fire walls designed for the housing, shelter, enclosure and support of individuals, animals or property of any kind. (16)

**Buttering** — Process of spreading mortar on a brick or other masonry unit with a trowel before laying it. (26)

**Buttress** — A projecting structure built against a wall or building to give it greater strength and stability. (26)

**Chase** — A groove or continuous recess built in a masonry wall to accommodate pipes, ducts, or conduits.

**Closer** — The last brick or block laid in a course. It may be a full length unit or one that is shorter.

**Collar Joint** — The interior longitudinal vertical joint between two wythes of masonry.

**Column** — A compression member, vertical or nearly vertical, whose width is less than four times its thickness, and whose height exceeds three times its least lateral dimension. (17)

**Common (or Running) Bond** — Bond pattern in which head joints are staggered or broken in adjacent courses.

**Concrete** — A mixture of portland cement, aggregates and water. (16)

**Coping** — A capping at the top of a wall, serving to shed water. (27)

**Corbel** — That part of a structure built outward from the face by projecting courses of masonry. (17)

**Course** — A continuous horizontal row of masonry units in a wall.

**Dead Load** — The weight of all permanent stationary construction or equipment included in a building.

**Deformed Bar** — A reinforcing bar conforming to ASTM Specifications. (Note — Bars not conforming to these specifications are classed as plain bars.) (17)

**Drip** — A projecting piece of material shaped so that it prevents water from running down the face of the wall or other surface of which it is a part. A groove on the bottom side of a sill or a crimp in a metal tie bonding two wythes of a wall is also referred to as a "drip."

**Effective Area of Reinforcement** — The area obtained by multiplying the right cross-sectional area of metal reinforcement by the cosine of the angle between its direction and the direction for which the effectiveness of the reinforcement is to be determined. (17)

**Efflorescence** — Deposit of soluble salts, usually white in color, appearing upon the surface or found within the pores of a masonry structure.

**Exposed Masonry** — Masonry construction which has no type of surface finish other than paint applied to the wall face.

**Fireproof Construction** — A type of construction designed to withstand a complete burn-out of the contents for which a structure was intended without impairment of structural integrity. (27)

**Fireproofing** — Any non-combustible material or combination of materials used to enclose structural members so as to make them fire resistant.

**Flashing** — Sheet metal or other material used in roof and wall construction to protect a building from seepage of water. (27)

**Furring** — Strips of wood or metal applied to a wall or other surface to even it, to form an air space, or to give an appearance of greater thickness. (27)

**Girder** — A large or principal beam used to support concentrated loads at isolated points along its length. (27)

**Grout** — Mortar of a consistency such that it will flow or pour easily without segregation of the ingredients. (16) (Note — Composition of grout may vary from that usually used with mortar. See Pea Gravel Grout.)

**Grouted Masonry** — Masonry in which the interior joints are filled by pouring grout therein as the work progresses. (16)

**Header** (See Bonder)

**Head Joints** — The vertical mortar joint between ends of masonry units. (25)

**Height (of wall)** — The vertical distance from the foundation wall or other immediate support of such wall, to the top of the wall. (16)

**Hollow Unit Masonry** — Masonry consisting wholly or in part of hollow masonry units laid contiguously in mortar. (17)

**Incombustible Construction** — That type of building construction which has all structural elements of incombustible materials with fire-resistance ratings of one hour or less. (27)

**Joint Reinforcement** — Steel wire, bar or prefabricated reinforcement which is placed in or on mortar bed joints.

**Joist** — One of a series of parallel beams used to support floor and ceiling loads, and supported in turn by larger beams, girders, or bearing walls. (27)

**Lateral Support (of walls)** — Means whereby walls are braced either vertically or horizontally by columns, pilasters or crosswalls or by floor or roof constructions, respectively. (25)

**Lath** — A building material of wood, metal, gypsum, or insulation board that is fastened to frame of a building to act as a plaster base. (27)

**Leaf (Leaves)** (See Wythe)

**Lintel** — A beam placed over an opening in a wall to carry the superimposed weight of the construction and loads above the opening.

**Live Load** — The total of all moving and variable loads that may be placed upon or in a building.

**Masonry** — A built-up construction or combination of building units of such materials as clay, shale, concrete, glass, gypsum, or stone set in mortar; or plain concrete. (16)

**Mortar** — A plastic mixture of cementitious materials, fine aggregate and water used to bound masonry or other structural units. (9), (16)

**Fat Mortar** — A mortar that tends to be sticky and adheres to the trowel. (25)

**Flow (of mortar)** — The consistency of mortar as determined by test. (28)

**Lean Mortar** — A mortar that, due to a deficiency of cementitious material, is harsh and difficult to spread. (25)

**Mortar Aggregate** — Aggregate consisting of natural or manufactured sand. (29)

**Retempering (of mortar)** — Restoring workability of mortar which has stiffened due to evaporation, by remixing and by addition of water.

**Water Retention (of mortar)** — The property of mortar (as determined by test) which prevents the loss of water to masonry units having a high suction rate or initial rate of absorption. (30)

**Partering** — The process of applying a coat of cement mortar or plaster to the back of the facing material or the face of the backing material; sometimes referred to as Parging. (25)

**Partially Reinforced Concrete Masonry** — Concrete masonry in which reinforcement is provided to carry the principal tensile stresses but which does not conform to the requirements for reinforced masonry. (17)

(Note — For reinforced masonry walls, the area of steel should be not less than 0.002 times the cross-sectional area of the wall, not more than 2/3 of which may be used in either direction. The maximum spacing of vertical reinforcement should be not more than 6 times the wall thickness nor more than 48 in.)

**Partition** — An interior wall one story or less in height. (16)

**Pea Gravel Grout** — Grout to which pea gravel is added. (17)

**Pier** — An isolated column of masonry. (16) (Note — A bearing wall not bonded at the sides into associated masonry is sometimes considered a pier when its horizontal dimension measured at right angles to the thickness does not exceed 4 times its thickness.)

**Pilaster** — A thickened wall section, column, or a pier built as an integral part of a wall.

**Plain Concrete** — Concrete without reinforcement, or reinforced only for shrinkage or temperature changes. (31)

**Plain Masonry** — Masonry without reinforcement, or reinforced only for shrinkage or temperature changes.

**Pointing** — Troweling mortar into a joint after masonry unit is laid. (25)

**Precast Concrete** — A plain or reinforced concrete building element cast in other than its final position in the structure. (31)

#### Properties

**Coefficient of Thermal Expansion** — Change in length per unit per degree of temperature change.

**Durability** — Resistance to action of weather (variation in drying, wetting, freezing, and thawing), alkaline or acid waters, and mechanical wear or abrasion.

**Heat Transmission Coefficient (U Factor)** — Amount of heat transmitted (in BTU) per hour, per square foot of wall, for each degree difference in temperature (fahrenheit) between the air on the warm and cool sides of the wall.

**Permeability** — Measure of amount of flow of water (or air) under pressure through a material.

**Sound Absorption Coefficient** — Ratio of the sound energy that a substance absorbs to the total sound energy that falls on it.

**Sound Transmission Loss** — Ratio of the incident sound energy on the loud side of a wall to the transmitted sound energy on the quiet side of the wall.

**Transverse Strength (Modulus of Rupture)** — The ultimate resistance of a beam, wall, etc. to bending forces.

**Volume Change** — Any change in volume due to any cause other than stress (such as moisture and temperature). (19)

**Raked Joint** — A type of joint which has the mortar raked out to a specified depth while the mortar is still green. (26)

**Reinforced Concrete** — Concrete in which reinforcement other than that provided for shrinkage or temperature changes is embedded in such a manner that the two materials act together in resisting forces. (31)

**Reinforced Concrete Masonry** — Concrete masonry in which reinforcement is embedded in such a manner that the two materials act together in resisting forces. (17)

**Reinforcement** — Structural steel shapes, steel bars, rods, wire fabric or expanded metal embedded or encased in masonry to increase the resistance of the masonry to internal stresses. (17)

**Rowlock** — A brick laid on its face edge. Usually laid in the wall with its long dimension perpendicular to the wall face. Frequently spelled "Rolok." (25)

**Scratch Coat** — The first coat of plastering applied to a wall. (26)

**Shoved Joints** — Head or vertical joints filled by buttering the ends of the units with mortar and shoving them against the units previously laid. (25)

**Slushed Joints** — Head joints filled after units are laid by "throwing" mortar in with edge of trowel. (25)

**Solid Unit Masonry** — Masonry consisting wholly of solid masonry units laid contiguously in mortar. (17)

**Stack (or Stacked) Bond** — Bond pattern in which the head joints form a continuous vertical line.

**Story** — That position of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of topmost floor and the ceiling or roof above. (16)

**Stretcher** — A masonry unit laid with its length horizontal and parallel with the face of the wall or other masonry members. (17)

**Stringing Mortar** — The procedure of spreading enough mortar on the bed joint to lay several masonry units. (25)

**Struck Joint** — Any mortar joint which has been finished with the trowel without pointing or tooling.

**Stucco** — Any of various portland cement base plasters used as covering for walls.

**Termite Shield** — A shield, usually of sheet metal, placed in or on a foundation wall or other mass of masonry or around pipes to prevent the passage of termites. (27)

**Tooling** — Compressing and shaping the face of a mortar joint with a special tool other than a trowel. (25)

**Toothing** — Projecting brick or block in alternate courses to provide for bonding with adjoining masonry which may follow. (26)

**Tuck Pointing** — The filling in with fresh mortar of cut-out or defective mortar joints in old masonry. (25)

**Unit Masonry** — A built-up construction or combination of masonry units set in mortar or grout. (17)

**Vapor Barrier** — A membrane, aluminum paint, oil paint film, metallic sheet, rubber base or other material capable of preventing or effectively restricting the movement of water vapor from a zone of high vapor pressure to one of lesser vapor pressure.

**Veneer** — A masonry facing which is attached to the backup but not so bonded as to act together under load.

#### Walls

**Area Wall** — The masonry wall surrounding or partly surrounding an area. Also the retaining wall around basement windows below grade. (25)

**Basement Wall** — A foundation wall enclosing useable area under a building.

**Bearing Wall** — A wall which supports any vertical load in addition to its own weight. (16)

**Cavity Wall (Core Wall)** — A wall built of masonry units or of plain concrete, or a combination of these materials, so arranged as to provide an air space within the wall (with or without insulating material) and in which the inner and outer wythes of the wall are tied together with metal ties. (16)

**Curtain Wall** — A nonbearing wall between columns or piers which is not supported by girders or beams. (27)

**Dry Wall** — A wall of stone or masonry units which is laid without mortar. (27)

**Dwarf Wall** — A wall which doesn't extend to the ceiling; also interior walls between the topmost ceiling level and the finished roof level. (25)

**Enclosure Wall** — An exterior nonbearing wall in skeleton construction anchored to columns, piers, or floors, but not necessarily built between columns or piers. (27)

**Exterior Wall** — Any outside wall or vertical enclosure of a building other than a party or common wall. (27)

**Faced Wall** — A wall in which the masonry facing and the backing are of different materials and are so bonded as to act together under load. (27)

**Fire Wall** — A wall, starting at the foundation and extending continuously through all stories to and above the roof, designed to restrict the spread of fire. (27)

**Fire Division Wall** — Any wall which subdivides a building so as to resist the spread of fire, but is not necessarily continuous through all stories to and above the roof. (27)

**Foundation Wall** — A wall below the floor nearest grade serving as a support for a wall, pier, column, or other structural part of the building. (16)

**Hollow Wall** — A wall of masonry so arranged as to provide an air space within the wall between the inner and outer parts (wythes) of the wall. (16)

**Masonry Bonded Hollow Wall** — A hollow wall built of masonry units in which the inner and outer wythes of the walls are bonded together with masonry units, such as in the all-rolok and rolak-bak walls. (16)

**Multi-Unit Wall** — A wall composed of two or more wythes of masonry. (25)

**Nonbearing Wall** — A wall which supports no vertical load other than its own weight. (16)

**Panel Wall** — A nonbearing wall in skeleton construction built between columns or piers and wholly supported at each story. (27)

**Parapet Wall** — That part of any wall entirely above the roof. (16)

**Party Wall** — A wall on an interior lot line used or adapted for joint service between two buildings. (16)

**Retaining Wall** — Any wall subjected to lateral pressure other than wind pressure or a wall built to support a bank of earth. (27)

**Spandrel Wall** — That part of a curtain wall above the top of a window or door in one story and below the sill of a window or door in the story above. (25)

**Veneered Wall** — A wall having a facing of masonry or other material securely attached to the backing, but not so bonded as to act together under load. (16)

**Wall Plate (Head Plate)** — A horizontal structural member, usually of wood, bolted to a masonry wall to which the frame construction is attached. (25)

**Wall Tie (Cavity)** — A rigid, corrosion resistant steel or other metal tie used to bond the two wythes of a cavity wall together; usually 3/16 in. in diameter and formed in a "Z" or a rectangle. (25)

**Wall Tie (Veneer)** — A strip or piece of metal used for tying a facing veneer to the backing. (25)

**Weep Hole** — A small hole, as in a retaining or cavity wall, to drain water to the outside. (27)

**Wythe (Leaf)** — Each continuous vertical section of a wall one masonry unit in thickness and tied to its adjacent vertical section or sections (front or back) by bonders (headers), metal ties or grout. (16)

## SECTION IV — REFERENCES

- (1) ASTM C125-48: Standard Definitions of Terms Relating to Concrete and Concrete Aggregates.
- (2) ACI Committee 212 Report, "Admixtures for Concrete," Journal of the American Concrete Institute, Proc. Vol. 51, October 1954.
- (3) ASTM C260-54: Standard Specifications for Air-Entraining Admixtures for Concrete.
- (4) ASTM C219-55: Standard Definitions of Terms Relating to Hydraulic Cement.
- (5) ASTM C350-54T: Tentative Specifications for Fly Ash for Use as an Admixture in Portland Cement Concrete.
- (6) ASTM C58-28T: Tentative Definition of the Term Aggregate.
- (7) ASTM C33-55T: Tentative Specifications for Concrete Aggregates.
- (8) ASTM C331-53T: Tentative Specifications for Lightweight Aggregates for Concrete Masonry Units.
- (9) ASTM C270-54T: Tentative Specifications for Mortar for Unit Masonry.
- (10) ASTM C175-55: Standard Specifications for Air-Entraining Portland Cement.
- (11) ASTM C205-53T: Tentative Specifications for Portland Blast-Furnace Slag Cement.
- (12) ASTM C150-55: Standard Specifications for Portland Cement.
- (13) PCA Bulletin D 13, "Effects of Variations in Curing and Drying on the Physical Properties of Concrete Masonry Units," W. H. Kuenning and C. C. Carlson, December 1956.
- (14) NCMA Technical Report No. 3, September 1946.
- (15) American Standards Association, "American Standard Sizes of Clay and Concrete Modular Masonry Units," A62.3-1946.



● Heralded as the world's most modern motel, the new Warm Mineral Springs Inn on U. S. 41 south of Venice, Florida, incorporates the hyperbolic paraboloid design which is comparatively new in America. Ready mixed concrete and concrete masonry for this ultra-modern structure were supplied by Littrell Concrete Company of Venice. Concrete specifications called for a 2,500 lb. test in 48 hours, with an ultimate strength of 3,750 lbs. Littrell's concrete tested 2,800 lbs. in 48 hours and went to 4,200 lbs. in 7 days. The contractor was able to strip the hyperbolic paraboloid shells in 24 hours as a result of the concrete's performance.

## Safety Council Has New Safety Booklets

The National Safety Council has two new publications available for industry, one for employees, the other for foremen. The publications, "Rules for Safety" and Book 8 in a series of "Five Minutes Safety Talks for Foremen," are designed to promote safety in industry.

"Rules for Safety," the council says, is the "biggest and best safety rules booklet ever compiled, 40 pages covering accident prevention do's and don'ts, how's and why's." The booklet gives safety rules for using

power tools, stacking material and lifting and carrying.

The book of safety talks for foremen is a compilation of talks that appeared in earlier books in the series. The 52 talks in Book 8, the council says, "provide full and balanced coverage of all the major types of occupational accidents." Talks in Book 8 range from "Why We Have a Safety Program" to "Bumping into People and Things."

Free copies of descriptive brochures on the literature are available from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

- (16) American Standards Association, "American Standard Building Code Requirements for Masonry," A41.1-1953.
- (17) American Standards Association, "Proposed American Standard Building Code Requirements for Reinforced Masonry," Fifth Draft, August 1951 (Revised November 1954).
- (18) ASTM C140-56: Standard Methods of Sampling and Testing Concrete Masonry Units.
- (19) ASTM C341-54T: Tentative Method of Test for Volume Change of Concrete Products.
- (20) ASTM C139-39: Standard Specifications for Concrete Masonry Units for Construction of Catch Basins and Manholes.
- (21) ASTM C55-55: Standard Specifications for Concrete Building Brick.
- (22) ASTM C90-52: Standard Specifications for Hollow Load-Bearing Concrete Masonry Units.
- (23) ASTM C129-52: Standard Specifications for Hollow Non-Load-Bearing Concrete Masonry Units.
- (24) ASTM C145-52: Standard Specifications for Solid Load-Bearing Concrete Masonry Units.
- (25) Technical Notes, Vol. 3, No. 8, "Glossary of Terms Relating to Structural Clay Products," Structural Clay Products Institute, August 1952.
- (26) *Masonry Simplified*, Vol. 1, J. Ralph Dalzell and Gilbert Townsend, American Technical Society, 1956.
- (27) National Bureau of Standards, Building Materials and Structures Report BMS 91, "A Glossary of Housing Terms," September 1942.
- (28) ASTM C230-55T: Tentative Specifications for Flow Table for Use in Tests of Hydraulic Cement.
- (29) ASTM C144-52T: Tentative Specifications for Aggregate for Masonry Mortar.
- (30) ASTM C91-55T: Tentative Specifications for Masonry Cement.
- (31) ACI, "Building Code Requirements for Reinforced Concrete," Journal of American Concrete Institute, Proc. Vol. 52, pp 913-986, May 1956.



# BERGEN TRI-MATICS

have Every requirement for high-volume, low-cost block production!

## HIGH PRODUCTION CAPACITY

Can exceed 6 cycles per minute, producing up to 1100 perfect 8" equivalents per hour—day after day, year after year.

## AUTOMATIC OPERATION

Push-button controls provide automatic Height & Density Control—Pallet Feeding—effortless Off-Bearing.

## LOW MAINTENANCE COST

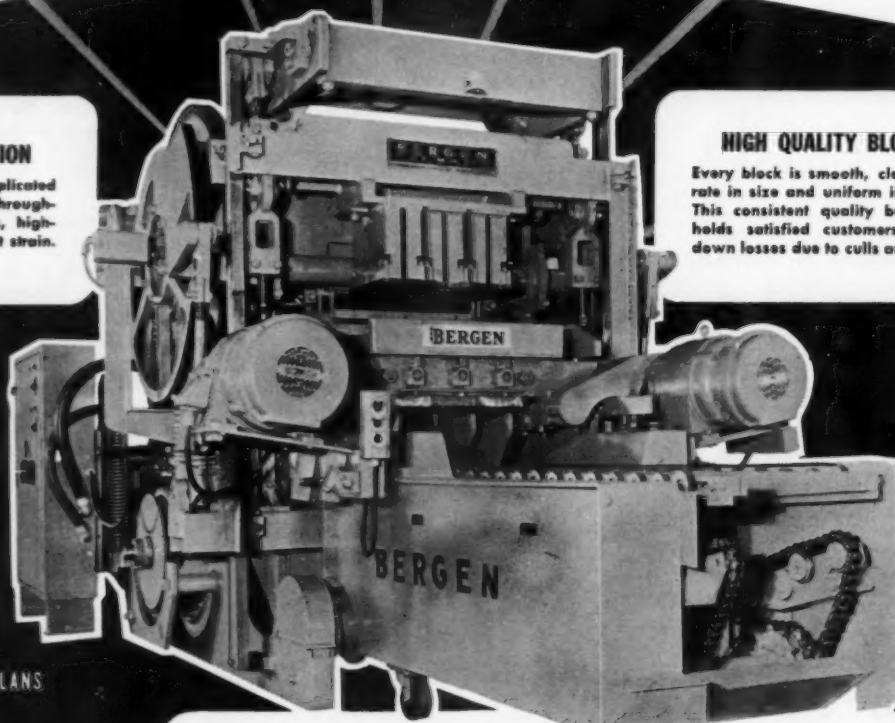
Every Bergen component is precision built to keep wear and repair costs at a minimum.

## RUGGED CONSTRUCTION

Engineered to eliminate complicated mechanisms; built sturdily throughout to maintain continuous, high-production operation without strain.

## HIGH QUALITY BLOCKS

Every block is smooth, clean, accurate in size and uniform in density. This consistent quality builds and holds satisfied customers—cuts down losses due to culls and rejects.



## CONVENIENT PURCHASE PLANS

1. Cash Payment.
2. Time Payments.
3. "Lease-with-option-to-buy" contract. (Non-royalty, fixed monthly payment).

WRITE for detailed literature on Bergen Tri-Matics. Or, have a Bergen engineer discuss your needs.

## LE SUEUR MOISTURE METER

Assures automatic batch mixture moisture control. Saves mixing time, costs and labor. Get details.

## Get all these Advanced Engineering Features with BERGEN TRI-MATICS

**Automatic Front Pallet Feeder.** Uses exclusive Harmonic Drive to provide smooth, automatic block handling at high machine speed.

**Zeromatic Height and Density Control.** Automatically assures quality blocks of uniform texture, height, and density without loss of speed.

**High-speed Off-Bearing Hoist.** Provides easy, effortless block handling, at high speed. Minimizes operator fatigue.

**Torque Arm Reducer Drive.** Supplies smooth, strain-free power drive; reduces wear and maintenance; eliminates heavy bulky drive.

### ALSO:

**Positive-acting Cam and Roller Operation**

**Modern Power Control Panels**

**Magnetic Motor Brakes**

**—and many more**

Note: These improvements can also be applied to your present equipment. Get details.



**BERGEN** MACHINE and TOOL CO., Inc.  
NUTLEY, NEW JERSEY

Bergen manufactures a complete line of Block Plant Equipment—Batch Mixers, Skip Hoists, Off-bearing Hoists, Height and Density Control Panels, Mold Repair Tables, and a full line of mold attachments and replacement parts.

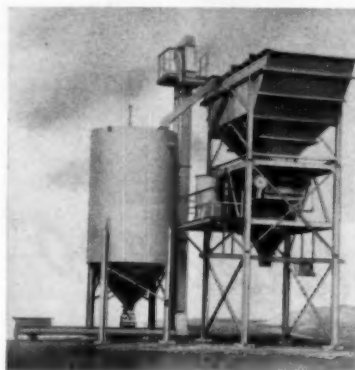
Telephone:  
Nutley (N.J.) 2-7300  
Cable:  
"BERGENCO" (Nutley, N.J.)



# A Look at What's New in EQUIPMENT and MATERIALS

## Portable Combination Plant By Heltzel

The new Heltzel Unitized Combination Batching Plant is said to set up fast, and handle both batch trucks and truck mixers. This portable plant is factory assembled in easy-to-handle sections. Only a minimum crew and standard crane equipment are required for erecting or dismantling. The combination comprises



bin section, an intermediate operating section and the substructure. The bin section comes complete in itself with simple attachments for connecting to the operating section. The operating section includes scales and batchers that are factory assembled and tested. This section fastens easily onto the substructure with but four simple fittings.

The elevator comes completely assembled, ready to set in place, as does the cement silo. The plant pictured here includes the new Heltzel traveling batch chute that in seconds converts the plant from a ready-mix operation to a dry batch plant, or vice-versa. A conveniently located, auxiliary control panel which will enable truck drivers to receive the batches without leaving their trucks can also be furnished. With this fea-

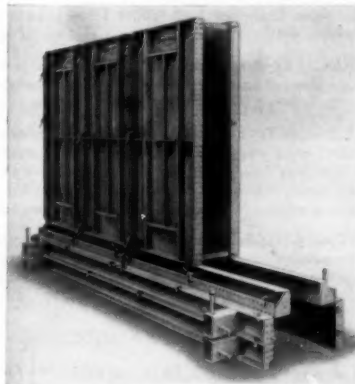
ture no platform operator is required.

These plants are available in capacities of 100 and 125 tons. They are designed for producing quality controlled concrete. Aggregate conveying or elevating equipment can be furnished in a range of capacities. Additional information may be obtained from Heltzel Steel Form & Iron Co., Warren, Ohio.

**Enter J41 on Inquiry Card**

## New Economy Forms Said to Speed Work

Concrete for footings and foundation walls may be placed at the same time through the use of the new Efco wall footing and sidewalk forms which are combined with regular Efco form equipment. This results in important savings in time and labor, and permits construction speed-up by eliminating the need of waiting for footings to harden before pouring walls. Where a concrete footing has already been placed, these forms may be used as a base for wall forms.



In addition to the above uses, the new Efco forms are designed for use as sidewalk forms or as slab edge forms. Multiple sections may be

clamped together horizontally with regular Efco plate clamps to obtain thicknesses greater than 4 inches where desired.

Efco wall footing and sidewalk forms are all steel — rigid and durable for hundreds of re-uses. Standard height is 4 in.; lengths are 96, 48, 24 and 12 in. Literature describing and picturing various uses for these forms and giving complete information will be sent by the manufacturer on request to Economy Forms Corp., Box 128, Highland Park Station, Des Moines, Iowa.

Enter J42 on Inquiry Card

## Bin-Dicator Has New Consolidated Catalog

A consolidated catalog is available for three products made by the Bin-Dicator Co. of Detroit, for all bulk material, level indication and control. The catalog includes photographs, cutaway and schematic drawings, outline dimensions, general specifications, special bin and conveyor applications, actual and suggested systems and applications for the Bin-Dicator, the diaphragm type bin level indicator; Roto-Bin-Dicator, rotating

paddle type bin level indicator; Bin-Flo Aerator, to promote flow of dry, finely ground bulk materials. Address requests to The Bin-Dicator Co., 13946 Kercheval Ave., Detroit 15, Mich.

Enter J43 on Inquiry Card

## New Water Meter Boxes Developed By Columbia

Columbia Machine, Vancouver, Wash., has developed two new types of meter boxes which can be produced on the firm's Model 12 and Model 10, 12 in. High machines using 1/4 in. x 18 in. x 20 in. pallets. The two styles of boxes differ in that one has a slightly beveled top and requires a special forming pallet. The beveled type meter box is designed to take a concrete cover that fits inside the top. The alternate style is designed for plain pallet use and has straight sides with the concrete cover and cast iron inspection plate forming the entire lid of the box.

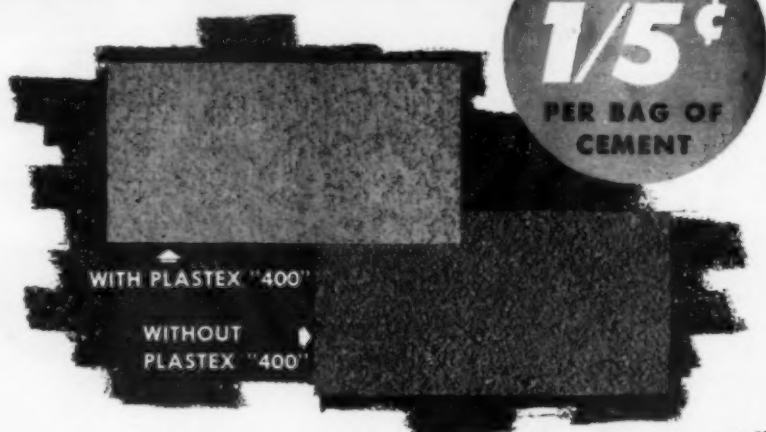
The 16 gauge forming pallet for the beveled top meter box is also used to make the lid by simply turning it over and handcasting the lid in the recess. If a handle is required, it can be easily inserted during the handcasting process. Also, should an inspection plate be required, provisions can be made while hand-casting the lid. Although cast iron inspection plates may vary in size, the one in the photo is 5 1/2 in. x 1 1/4 in. x 1 1/2 in. with "City Water Meter" cast in the top of the plate as well as a 1/2 in. x 1 in. hole to provide for easy removal



and faster reading of the water meter by an inspector. The cast iron inspection plates are available from Columbia Machine.

The straight sided meter box and cover is designed for plain pallet production without use of forming pallets. The cover for the straight sided box may be produced automatically on the block machine and is designed for use as an entire lid. The cover has an opening to accommodate a 5 1/2 in. x 1 1/4 in. x 1 1/2 in.

## HERE'S THE DIFFERENCE AT



## New and Improved Plastex "400" at the lowest price on the market

### QUALITY-ECONOMY-GUARANTEE

The three important facts about Edick Laboratories' new Plastex "400".

**QUALITY:** This special formula (not a detergent) will give you a sharper cornered—lighter colored—smoother surfaced, better textured block—that is both denser and stronger!

**ECONOMY:** ONE tablespoon of dry, powdered Plastex "400" gives you better dispersing, wetting, densifying and plasticizing! Easier stripping will double the life of your mold box liners! The cost of Plastex "400" is but a fraction of the savings achieved through reduced culls and seconds!

**GUARANTEE:** Your money back—if Plastex "400" does not make a stronger block and provide the economy and quality you expect—dollar for dollar and pound for pound!

- 20% lighter color—better texture.
- Greater plasticity—reduced cracking.
- Stronger, denser block.
- Reduced moisture absorption!
- Simple to use—add dry to mix.
- Hydrates all your cement.

MANUFACTURED AND DISTRIBUTED BY



427 W. National Avenue, Milwaukee 4, Wisconsin

### PRICES F.O.B. MILWAUKEE

1 drum.....	14 1/2¢ per lb.
2 drums.....	13 1/2¢ per lb.
5 drums.....	13¢ per lb.
10 drums.....	12 1/2¢ per lb.

in. cast iron inspection plate.

More detailed information may be had by writing Columbia Machine, 107 S. Grand, Vancouver, Wash.

Enter J44 on Inquiry Card

### Brochure Dramatizes Uses of Pozzolith

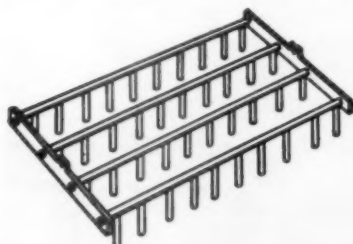
Master Builders Co., Cleveland, Ohio, has issued a new 20-page brochure illustrating modern construction projects in which lightweight concrete, with Pozzolith added, has been used. Photographs and job stories show a wide variety of uses this material.

The brochure features thirteen notable construction projects with discussion covering the use of lightweight aggregate concrete for columns, beams and floor slabs and in multi-story structures, thin shell concrete and bridge decks. The job stories show the role played by Pozzolith in providing adequate workability and in maintaining strength to meet structural requirements. Copies of the brochure may be had by writing Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.

Enter J45 on Inquiry Card

### Universal Grid Designs Developed by Bergen

Block making plants that find it necessary to change molds frequently are offered Bergen's new Universal Grid Design, No. 1062F, made with rectangular prongs. Bergen has positioned the rectangular prongs in such a manner that this grid can be used in making 4 in., 6 in., 8 in., 10 in. & 12 in. block. Efficient agitation for any of these sizes except a combination of two 10 in. and one 4 in., is provided for. Block operators save time and effort on change-overs, and can stock less grids than when using



standards for each individual block size.

The use of Bergen's Universal

Grid Design, No. 1062G, made with round prongs, 1/2 in. in diameter, has increased the production of lightweight block. The rounded prongs materially improve the feeding and increase the flow of the aggregates into the mold, and retard the tendency of the mix to build up on, or stick to, the grid prongs. Rounded prongs will not wear as long as the heavier, bulkier rectangular prongs, but the use of Bergen's Universal Grid, No. 1062G, will eliminate specific operational problems, and cut lightweight block making costs.

Full details on these Universal

Grids can be obtained from the Bergen Machine & Tool Co., Inc., 189 Franklin Ave., Nutley 10, N.J.

Enter J46 on Inquiry Card

### Here's Besser Folder On Block-O-Mation

Block-O-Mation, a folder illustrating and describing the handling of block or brick by power, is offered by Besser Company, Alpena, Mich. The well-illustrated booklet shows four ways of unloading block or

## UNIFORM PRODUCTION

### FOR BLOCK AND READY MIX PLANTS

### HYDROBOT

#### FOR UNIFORM BLOCK PRODUCTION

HYDROBOT is an electronic instrument to automatically shut off the mix water when the mix is the proper consistency.

**ACCURATE** — Will duplicate batches with far greater precision than human judgement.

**SIMPLE** — Installed by your own maintenance man. Single dial adjustment. Allows easy setting for any moisture requirement.



**\$278.00 Delivered Less 2% 10 Days**

### MARK X, H<sub>2</sub>O METER — FOR UNIFORM READY MIX PRODUCTION



The MARK X is an electronic instrument to determine the moisture in fine aggregates, such as sand, screenings, etc.

**ENGINEERED** — to be the most reliable and accurate instrument produced for the purpose at any price.

**POPULAR** — Most widely used Moisture Meter ever marketed — THE STANDARD OF THE READY MIX INDUSTRY.

**Automatic MEMORY** — The batcher can see at a glance what his previous moisture has been and whether or not it has changed since the last batch.

**\$178.00 Delivered Less 2%, 10 DAYS**

WRITE TODAY FOR DETAILS

### SARASOTA ENGINEERING COMPANY, INC.

DESIGNERS • MANUFACTURERS • CONSULTANTS

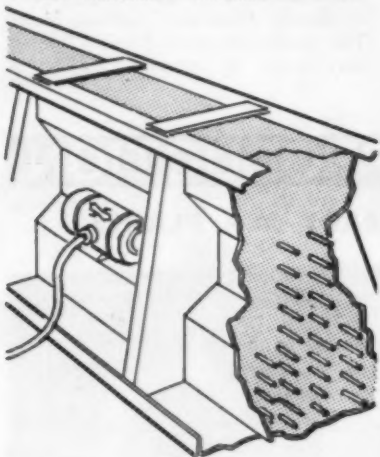
P. O. BOX 1329 SARASOTA, FLA.

PHONE: RINGLING 7-3034

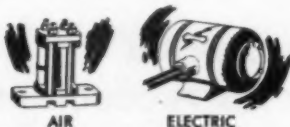
CABLE ADDRESS: "SARENCO"



# EXTERNAL VIBRATION SPEEDS CASTING



External vibration with Cleveland Vibrators speeds up the manufacture of precast concrete shapes. A simple flip of the switch and your whole form is vibrated. Vibration is spread evenly throughout the form and settling is uniform. Casting is accomplished more rapidly and product quality is consistently good.



Cleveland Vibrators are portable, and can be moved from form to form easily and quickly. Either air or electrically operated vibrators are available. For complete data, including prices, write today to:



DB-2708 Clinton Av. • Cleveland 13, O.

brick from racks and placing them on a cubing platform or cubeveyor. Pictures show four economical ways by which block can be power handled, eliminating slow, heavy lifting by hand. For copy of booklet write Besser Co., Box 314, Dep't. Adv., Alpena, Mich.

Enter J47 on Inquiry Card

## Big Prestressed Beams Easy For Strad-Krane

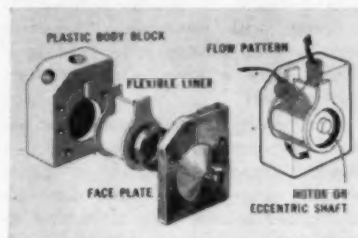
Two Silent Hoist Strad-Kranes operating in a plant of American-Marietta Co., are reported to make easy work of lifting 50-ton beams and transporting them in tandem. The plant is the Concrete Products division of American Marietta at Hodgkins, Ill. The beams are 100-ft. long and are part of a 52,000 ton order for the new Illinois Toll Road.

The Silent Hoist Strad-Krane is one of the newest concepts in materials handling in years. Designed and manufactured by the Silent Hoist & Crane Co. of Brooklyn, N.Y. it is a traveling bridge plus a mobile crane in one. The prime feature of the machine is that it is not of the usual cantilever type; the center of the load is always inside of the wheel supports. This eliminates the need for counterweights, stabilizers or jacks, allowing a new unrestricted freedom in mobility and function. The load to be carried is suspended from a hook under the frame of the unit. This hook can be spotted directly over the load. It is controlled by a trolley bridge hoist located on the top structure. The hook can travel from one end of the machine to the other transversely and also up and down, duplicating the action of a shop overhead crane — but the Strad-Krane is not confined to rail tracks; it is self-propelled on pneumatic tires and goes wherever it is needed, right to the job.

Operators of the Silent Hoist Strad-Krane at American-Marietta have been particularly enthusiastic

## Vanton Develops Pump For Abrasive Slurries

Vanton Pump & Equipment Corp., Hillside, N.J., has developed a plastic sealless pump which it says will handle abrasive slurries used as concrete additives without excessive maintenance cost. The Vanton Corporation gives a case history of the costly efforts of a ready-mixed concrete operator in New Jersey to find a pump which would handle the diatomaceous earth additive required to

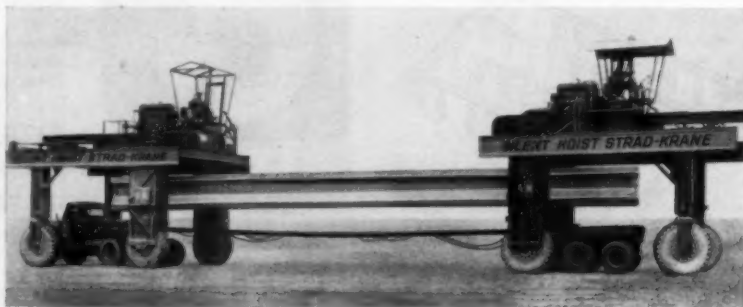


obtain the concrete mix with the desired characteristics. Conventional pumps of several different types were tried but had to be dismantled and repaired frequently at heavy cost. There was also constant leakage.

over its power steering and power brake features. They have also praised its 360 degree visibility. To make the operator's job even easier, the 450 cu. in. 6 cylinder power plant is equipped with a directional power shift automatic transmission. Also, the hoisting element for the main hook lines and for the power trolley is through a smooth hydraulic transmission.

Strad-Kranes used by the American-Marietta Co. have a capacity of 25 tons each and are capable of traveling up to 10 miles per hour, forward or reverse. Smaller and larger tonnage capacities are available for specific applications. For further details, write to Silent Hoist & Crane Co., Dept. 204, 841 63rd St., Brooklyn 20, N.Y.

Enter J48 on Inquiry Card





The manufacturer reports that successful operation followed immediately upon installation of a Vanton plastic sealless pump, connected with a Buna N body block and a natural rubber flex-i-liner. Installation date was December, 1955 and the pump is still operating on a six-day schedule moving 14 gpm of the additive slurry. In more than two years the company says the only maintenance required has been replacement of one inexpensive flex-i-liner.

The success of the Vanton pump, the manufacturer says, can be traced to the construction materials used and the unique design of the pump. Leakage and maintenance of shaft seals was eliminated since the pump has neither seals nor stuffing boxes. Flanges on the flex-i-liner straddle the pump housing and are pressed

to its sides by bolted face plates, thus forming an isolated fluid chamber between the inside of the body block and the outside of the flex-i-liner. The pumping action is accomplished by a rotor mounted on an eccentric shaft which rotates within the center of the liner, creating a progressive squeegee action on the fluid trapped between the liner and body block.

Vanton plastic pumps are available in a wide range of plastic and synthetic materials which include Teflon, high temperature Polyethylene, PVC and Bakelite. Capacities range from 1/3 to 40 gpm. Detailed information about Vanton pumps may be obtained by writing Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N.J.

Enter J49 on Inquiry Card

## Says Portable Batching Plant Pays For Self

R. B. Ross of Brownwood, Texas, manufacturer of the Ross Porta-Plant, says a Mississippi contractor saved the cost of the plant on ready-mix for a school job in addition to making a normal profit on the operation. Mr. Ross describes the Ross Porta-Plant Team as consisting of a portable concrete batching plant and a portable bulk cement plant. It can be towed at normal road speeds Mr. Ross says, and can be in operation on the job site within minutes of arrival, producing and delivering whatever quantity of concrete the job requires. The batching plant unit, designed for sack cement, can be fed with any front-end loader. It is available in 3½ yd. and 6-yd. sizes and can produce up to 40 yd. of concrete per hour.

The bulk cement plant unit has a capacity of 220 bbl. The loading

## Handy Checklist In New Hyster Catalog

A handy checklist that shows the special attachments, accessories and truck options available with each industrial truck in the Hyster line is included in a new condensed catalog recently released by the company. In addition, the catalog includes pictures and specifications of the complete Hyster line, which encompasses lift trucks from 1,000 to 20,000 pounds capacity, straddle carriers,

hopper has a 10-ft. extension to accommodate dump trucks, tail end, hopper bottom dump trailers or rail car loading. The unit is rated to load and elevate 150 bbl. of cement per hour.

Detailed information is available on request to Ross Porta-Plant, Box 446, Brownwood, Texas.

Enter J50 on Inquiry Card



AUGUST, 1958

For more information use postcard facing page 48.

# Dodson's Digest



## For the birds!

Bill Nilan is in the concrete products business in a big way. Perhaps the best proof of this is his slogan, "If it's made of concrete, we've got it!" But, so far I hadn't been able to get him to use Calcium Chloride in his mix.

"Hi, Bill," I greeted him when I called last. "What's new?"

"Glad you asked," he laughed. "Reflectorized mail-box posts, fluted steps, multi-colored trash burners, round patio blocks, and . . ."

"Hold it!" I interrupted. "You sure these things are going to sell?"

"Should," he replied, confidently. "Besides, I've got to have everything imaginable. About the only item I can't supply is . . . well . . . is a chartreuse-colored bird bath!"

"No market for that," I ventured.

"Thing is," he continued, "my money's all tied up in molds. Can't make new products fast enough."

"Aha! An opening!" I exclaimed. "Seriously, Bill, if you used Calcium Chloride in your mix, you could release your molds in half the time—even during warm weather."

"Dod, I don't see why that . . ."

"Simple," I broke in. "You get twice the output from your molds. Frees your capital for new molds, new products, more profits! And you get top quality with Calcium Chloride. Reduced chipping, fewer rejects. I guarantee results."

"Okay," he grinned, "if it'll do what you say, I'll give it a try. Got an idea for a new prod—"

Just then, the door opened and an elderly gentleman peeked into the office. His voice crackled, "Who's the one to see about gettin' a bird bath—chartreuse-colored?"

—L. D. Dodson

**P.S.**—Our folder, "How To Make Better Concrete Products and Ready-Mix," shows you with the facts on Wyandotte Calcium Chloride. Send for your free copy today. Wyandotte Chemicals Corp., Wyandotte, Mich. Offices in principal cities.

**Wyandotte**  
CHEMICALS

MICHIGAN ALKALI DIVISION  
HEADQUARTERS FOR CALCIUM CHLORIDE



39

yard cranes and platform trucks. The booklet also describes the services available to Hyster customers both before and after equipment purchases. This includes assistance in analyzing materials handling problems, assistance of factory-trained mechanics for service and maintenance problems and availability of spare parts and equipment. For a copy of the condensed catalog write to Hyster Co., 1003 Myers St., Danville, Ill.

Enter J51 on Inquiry Card

## Small Block Machine Offered at Low Cost

The new Slide-O-Matic concrete block machine made by General Engines Co., Thorofare, N.J., features a power press action which the maker says exerts more than 2000 lb. pressure to make sharp, even-edged block. A new vibration system is said to intensify direct vibration for even compaction. As described by the manufacturer, the new Slide-O-Matic block machine has an easy five-step operation producing three 8 x 8 x 16-in. block per minute. The machine also produces many other sizes and types of concrete blocks

such as patio blocks, concrete bricks, bull nose, jamb and corner blocks. Quick change mold box cuts change-over time for different sized blocks to less than ten minutes. Two bolts are removed to insert a change in molds.



The machine has built-in off-bearer, and the finished block slide forward for easy removal.

Only one set of plain pallets of flat wood or steel is required. The company can design an original mold box to make any special sizes or types at an added cost, in most cases. The machine is operated by a 1 h.p. electric motor or 2 h.p. gasoline engine, and will produce 1400 blocks with one operator in an eight hour day. A catalog is available free upon request to General Engines Co., Route 130, Thorofare, N.J. The catalog gives complete specifications and description of the new machine.

Enter J52 on Inquiry Card

## Admixtures May Now Come By Tank Truck

Ready-mix operators in several large centers are now receiving chemical admixtures for concrete just the way the householder automatically gets a fresh supply of fuel oil. A tank truck rolls up to the ready-mix plant or on-the-site batch plant, and feeds the liquid admixtures into storage tanks.

The simplified deliveries were introduced recently to regional distributors of WRDA and Darex AEA, water reducing agent and air-entraining agent manufactured by the Dewey and Almy Chemical Division, W. R. Grace & Co., Cambridge, Mass.



Traditionally, WRDA and Darex AEA are shipped ready-to-use in 55-gallon drums. The ready-mix operator hooks up the drum to his permanent metered dispensing apparatus. With the bulk delivery system, the distributor installs storage tanks at the ready-mix plant or batch plant, and fills directly into them.

The new delivery system was pioneered by Admixtures, Inc., Philadelphia area distributor. It has been adopted in the Boston area by Littleton Construction Specialties Co., in the Chicago area by E. W. Zimmerman, Inc., and in the Toledo area by J. W. Materials Co., Inc.

Enter J53 on Inquiry Card

# S M I T H

## THE FIRST NAME YOU THINK OF for Profitable Septic Tank Equipment



This is the tested-and-proven method that insures fast, economical production of quality tanks in 500, 600, 750 and 1000 gallon capacities.

Well-reinforced, precision-built form pours and strips upright. Light-weight — requires minimum time for stripping and setting up. Form includes: Pouring pan, three section septic tank lid pans and pick up bar for handling.

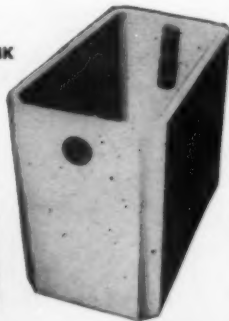
THIS FORM ——— PRODUCES THIS TANK

All sections assembled with wedge bolts. Hoist descends into tank—no need for high rig.

NO ROYALTY ON SMITH STEEL SEPTIC TANK FORMS OR TRUCK HANDLING RIG.

SMITH truck rig is built for long, continuous service. One man operated. Can handle 3 tanks at one load.

Write or wire for specifications and prices.



**COOK & INGLE CONCRETE PRODUCTS CO., INC.**

305 FERNWOOD AVE. PHONE 1497 DALTON, GA. P.O. BOX 626

# NEW! Amazing Product Cuts Concrete Water Absorption

**WATERPROOFS  
PLASTICIZES  
AIR ENTRAINS**

## Forrer's *INTEGRAL* WATERPROOFING PASTE

For Concrete, Masonry Units, Cast Stone, Split Rock, Stucco and Mortar, Forrer's Integral Waterproofing Paste is **essential** ... and, **inexpensive**! Use only 1/2-lb. to 1-lb. per bag of cement depending on mix.

One Milwaukee user declared, "It's the only waterproofing material I've found in 30 years that gets the results I demand!"

Write for your **FREE** sample and prove to yourself that this amazing new Forrer's product cuts water absorption drastically.

Integral Waterproofing Paste is sold in 40-lb. pails at 25¢ per lb.; 100-lb. drums at 20¢ per lb. and 400-lb. drums at 18¢ per lb.



**MAKE YOUR OWN TEST!** Block on left made with Forrer's Integral Waterproofing Paste shows almost no water absorption while other block has absorbed all the water.

### FREE SAMPLE

A 5-gal. pail (Approx. 40-lb.) a \$10 value is yours free of charge. You pay only shipping charges. For your free sample

**Write**

**Forrer's**

Division of SPRAY-O-BOND Co.  
2225 N. Humboldt Ave., Milwaukee 12, Wis.

## FORRER'S

### STAR PRODUCTS FOR MASONRY

- ★ X-L 100. Powdered concrete plasticizer
- ★ Kleen-Mix. Eliminates "build-up" on hoppers and mixers
- ★ Hydro-check®. The perfect fast-setting, patching cement
- ★ For-Air. Concentrated air entraining agent
- ★ Economy Release Oil. A parting solution that cuts clean-up time by 50%

National Sales Representatives for:

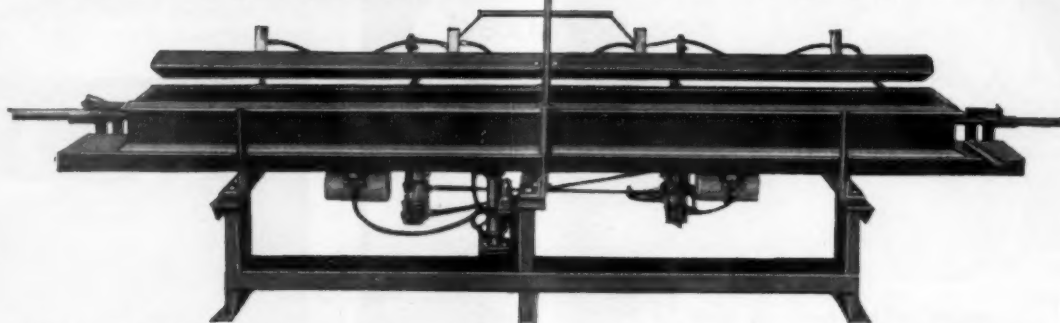
### RAMSEY PRODUCTS

- ★ A.B.C. Automatic Batching Controls. Completely automatic weighing, mixing and handling
- ★ Sand Moisture Probe. Measures sand moisture content
- ★ Moisture Meter. Regulates water in concrete mix automatically
- ★ Calcium Chloride Dispenser. Automatic batching control.



## The New Improved KENT LINTELATOR

It's redesigned, built heavier, equipped with additional heavy duty vibrators, easier and faster to operate.



Hundreds of LINTELATORS are in use producing concrete lintels, coping, parking lot bumpers, fence posts, etc.

The business has proved to be extra profitable because it has come largely from established sources. New sales methods have not been necessary.

These profitable items can be used by almost all present customers.

The interesting story can open doors that have been closed and increase your list of purchasers. The new improved LINTELATOR now in production assures even greater satisfaction and profit.

Write for information now and expand your business without increasing your headaches.

*The* **KENT MACHINE CO.** Cuyahoga Falls, Ohio, U.S.A.

SUBSIDIARY OF THE LAMSON & SESSIONS COMPANY

Canadian Distributor: Wettlaufer Equipment, Ltd., 49 Merton St., Toronto 12, Ontario



## Dunn Introduces New Pipe and Tile Machine

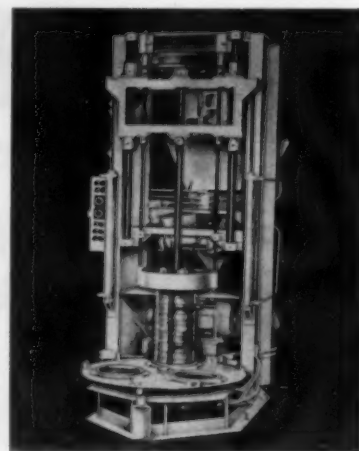
Automatic operation and versatility are featured in the new Dunn Pipe and Tile Machine which is designed and engineered to achieve high production and lower labor costs. Primarily intended to produce units 24 inches long with three styles of ends, butted, tongued and grooved, and bell — this machine will also economically make the same units in the conventional 12-inch lengths. Each can be made in six different diameters: 4, 5, 6, 8, 10, 12-inch.

The three-position turntable provides for performing three operations simultaneously. While one unit is formed and packed, another is being removed from the machine, and the casing for the next is being placed in position. The table turns on four rollers operating in roller bearings. The hydraulic cylinder provides automatic indexing with the table being locked in position after each indexing cycle. Indexing speed is adjustable. The top die-ring table, supported by two rods mounted to the packer shaft supporting head, is automatically raised from the casing when the sup-

porting head reaches the limit of its upward stroke.

The packer head assembly is located at the bottom of the packer head shaft and is so secured as to permit quick changing from one size assembly to another. Initial packing is done by the packing shoes which impart a wedging action of the concrete against the casing to produce extreme density. Final finishing is done by the packing shell which also serves to trowel the inside wall to smooth hardness. The speed of rotation can be adjusted to units of different diameters. The main movements are hydraulically actuated. The hydraulic pump is mounted directly on the oil reservoir, along with the pump motor.

With hydraulic movements and continuous cycling, the operation of the Dunn concrete pipe and tile machine is almost completely automatic. After the "start" button is pressed, the operator's work is concerned mainly with inserting the empty casings in the machine turntable and removing them when filled. Mixed material is received by an attached automatic feeder and belt-fed into the casing. The volume of material is regulated by an adjustable flow-control gate and timed interval belt



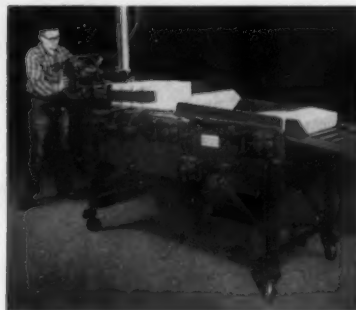
travel. Uniformity of feed is facilitated by an agitator. Power is by a 3/4 H.P. gear-head motor.

Over-all dimensions of the machine, including automatic feeder, are five feet wide by 14 feet long. Eleven feet to the ceiling is adequate allowance. Further details are available from the manufacturer: W. E. Dunn Mfg. Co., 319 West 24th St. Holland, Mich.

Enter J54 on Inquiry Card

## Besser Brickveyor Tips Brick Automatically

The Besser Company, Alpena, Mich. believes its new Brickveyor is the modern way to position brick for the cubing operation. A brick cuber picks up 32 brick at a time and deposits them on Brickveyor in an upright position. Two variable speed



belts automatically tip brick from vertical to horizontal position. Adjustable inclined gravity roller conveyor accumulates rows of brick for brick clamp handling at opposite end of Brickveyor. The brick clamp, interchangeable with block cubing clamp, assures fast, safe handling from Brickveyor to cube.

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**Colored  
ready-mixed  
Concrete**

**10 DIFFERENT  
COLORS**

ECONOMICAL—costs very little extra per square foot . . .  
DURABLE—color all-the-way through the concrete . . .  
PERMANENT—to weather and sunlight . . .

For further information and color card write to  
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3285 E. 26th STREET LOS ANGELES 23, CALIF.  
eastern office:  
P.O. BOX 292 NIXON, NEW JERSEY





TIPS

BRICK

AUTOMATICALLY

• The Besser Brickveyor is the modern way to position brick for the cubing operation. A brick cuber picks up 32 brick at a time and deposits them on Brickveyor in an upright position. Two variable speed belts automatically tip brick from vertical to horizontal position. Adjustable inclined gravity roller conveyor accumulates rows of brick for brick clamp handling at opposite end of Brickveyor. The brick clamp, interchangeable with block cubing clamp, assures fast, safe handling from Brickveyor to cube.

Brickmaking is profitable when you can make brick on a Vibrapac and cube them with the help of a Brickveyor. Handles up to 60,000 brick per day. Speeds up the job.



• Send for Bulletin No. 128 describing 4 ingenious ways of handling block or brick by power.

**BESSER COMPANY • Complete Equipment for Concrete Block Plants • Alpena, Michigan, U. S. A.**



Counter is dash-board mounted. Switch mounted on frame . . . cam actuated by drum.

*Qualify for*

**STATE and FEDERAL truck mixer jobs**

**Deliver a BETTER MIX . . . . .**

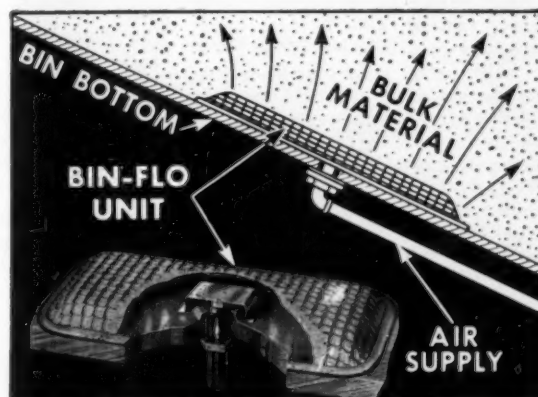
- Install Durant Productimeter 3-Y-8440 on your trucks to count exact number of mixing revolutions.
- ✓ COUNTER CAN BE CAB MOUNTED FOR EASY CHECKING
- ✓ ROUGH ROAD JARRING WILL NOT "ADD" COUNTS
- ✓ COMPLETE KIT — NOTHING ADDITIONAL NEEDED
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- ✓ DESIGNED FOR 6V. or 12V. SYSTEMS — EASY INSTALLATION

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**KEEPS BULK MATERIALS MOVING**

BIN-FLO units in bins, chutes, hoppers, etc., restore flow characteristics to dry, finely ground materials which tend to pack or bridge in storage. Types for all materials and conditions. No moving parts; simple installation; negligible operating cost; no maintenance cost.

BIN-DICATOR the original diaphragm-type bin level indicator. In successful use for over 20 years. ROTO-BIN-DICATOR new, motor-driven paddle type; excellent on bins under pressure or vacuum, and for general application. Also explosion-proof units, U.L. listed.

**THE BIN-DICATOR CO.**

13946-C1 Kercheval • Detroit 15, Mich.

Write for detailed literature or call

VALLEY 2-6952

**WE SELL DIRECT • PHONE ORDERS COLLECT**

## Vibrating Screed Strikes Off Ten Beams At Once

Stow Mfg. Co., Binghamton, N. Y., reports the successful use of its twin beam vibrating screed in striking off and vibrating 10 precast concrete beams at the same time. This was in the plant of the Struc-



tural Precast Co., Inc. at Raulsville, Pa. The structural members were "I" beams, 6-in. X 3-in. X 6 ft. long. The forms were combined in such a way that 10 beams could be poured at once.

The vibrating screed incorporates

a 1-hp motor which drives a vibrating unit at 5100 vibrations per minute, these vibrations being transmitted to the concrete as the screed is pushed along over the surface of the forms.

Details of the Stow twin beam vibrating screed may be had by writing to Stow Mfg. Co., 443 State St., Binghamton, N. Y.

Enter J56 on Inquiry Card

## Claim Long Life For New Hyster Clutch

An entirely new type of clutch facing which the manufacturer claims will outlast conventional clutches in hard service lift truck applications is now standard equipment in Hyster cushion tired lift trucks from 6000 to 8000 pounds capacity. The new Feram-clutch is composed of metallic friction materials fused with refractory or ceramic agents to produce a hard surface face that is almost impervious to the high temperatures generated in severe truck appli-

cations. High clutch temperature while it is under pressure is the major cause of clutch wear and breakdown. Feram faced units according to the manufacturer, can successfully withstand temperatures of 600 degrees.

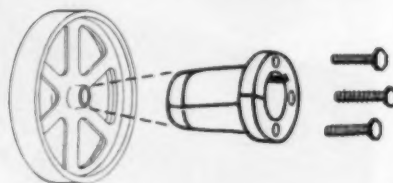
In a long series of tests conducted at Hyster's Portland, Oregon, proving grounds and in countless field tests, the new unit — which is called Feram facing — outlasted all other types at high temperatures by a wide margin. Moreover, the new clutch did not lose sensitivity or "feel", an important feature in lift trucks because of the inching operation and frequent close-quarter maneuvering. The Feram clutch is available for trucks now in the field through the service department.

For further information write Hyster Co., 1003 Myers St., Danville, Ill.

Enter J58 on Inquiry Card

## Offer Lock Hubs To Modernize Pulleys

Bergen's Taper-Lock or "quick detachable" hubs are said to have proven so successful in V-belt sheaves that their usage spread to sprockets, gears, and eventually to large size pulleys. Bergen's modern pulleys and tapered hubs have been thoroughly field-tested. The manufacturer claims



that machines so equipped will function better with no more badly worn pulley shafts, wobbly pulleys, loose key-ways, or sloppy-filling bores. These pulleys and tapered hubs assure the snuggest, non-rocking fit obtainable; an absolute minimum of operational wear and tear; and maximum production efficiency.

According to the manufacturer, the installation of either the 30 in. pulley, No. 1285A, or the 48 in. pulley, No. 1373A, with tapered hubs, will substantially reduce machine vibration under rugged use, lower maintenance costs and give "smoother", longer, trouble-free operation.

Bergen Machine & Tool Co., 189 Franklin Ave., Nutley, N. J.

Enter J59 on Inquiry Card

## Vacuum Lifting Units Move Concrete Products

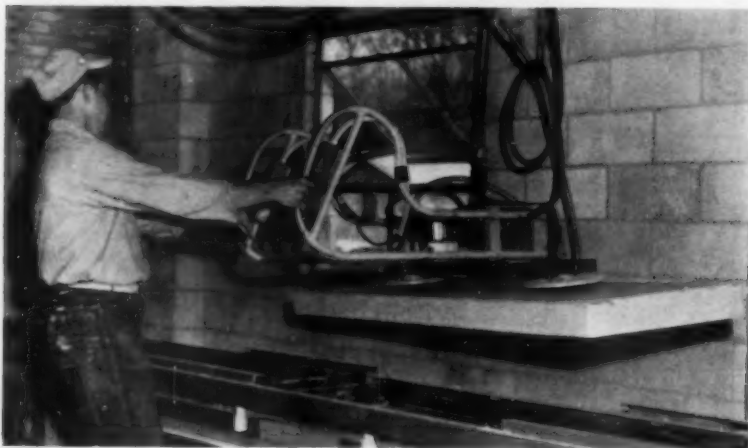
Four Vac-U-Lift units with push button controls and built-in hand grips have been installed in the plant of Calsi-Crete, Inc., Pacific, Mo., manufacturers of aerated concrete roof deck and building material. The units are made by Vac-U-Lift Co., Salem, Ill. Calsi-Crete executives report that one man is now able to handle material which formerly required four men. The material which the photograph shows being lifted weighs 165 lb. The Vac-U-Lift unit, however, has a maximum lifting capacity of 600 lb. All Vac-U-Lift units

are connected to overhead electric hoists.

One of the four units currently in operation in the Calsi-Crete plant is used to remove aerated building material from steel molds which have been specially designed to work in conjunction with the Vac-U-Lift. Other units are employed in planing and smoothing operations, for stacking and for loading over-the-road carriers.

A special brochure which explains the vacuum system and demonstrates its versatility is available by writing Vac-U-Lift Co., Salem, Ill.

Enter J57 on Inquiry Card



## Boost plant profits with **CLEAN PALLETS**

You can produce block of uniform height... and *more* block per hour... with *clean* pallets. That's why you should install a Besser Pallet Cleaner. This machine cleans pallets without warping or nicking, removing all the build-up of concrete *right down to the bare steel*. It cleans up to 300 pallets per hour. Noiseless and dustless in operation. Portable — can be operated in any location without interfering with block production. Manufactured and guaranteed by BESSER Company, makers of the World-famous VIBRAPAC concrete block machine.

Write for copy of Bulletin No. 101.

Machine automatically compensates for variations in pallet thickness.



**BESSER COMPANY • Complete Equipment for Concrete Block Plants • Alpena, Michigan, U. S. A.**



EDMONT CASE NO. 603: Canvas gloves used in loading and unloading concrete block lasted 1 shift. On the same job, Edmont #30 plastic palm-coated gloves wore 5 to 6 shifts.

### Job-fitted glove outwore canvas 5 to 1



No. 30  
palm-coated  
knitwrist

**Edmont**  
JOB-FITTED  
**GLOVES**

The concrete products plant in the case above switched to *job-fitted* Edmont Monkey-Grip gloves because of their outstanding wear. Their special plastic palm coating resists abrasion and snagging... won't chip, crack or peel... is highly flexible with an excellent grip. For extra duty service, triple-thick palm styles available.

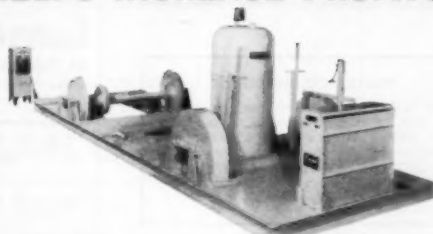
**Free Test Offer to Listed Firms:** Tell us your operation, materials handled. Without cost, we will send you gloves for on-the-job testing.

Edmont Manufacturing Company  
1206 Walnut Street, Coshocton, Ohio  
In Canada write MSA, Toronto

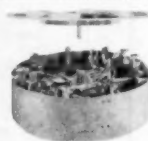
**MECO**

Handling equipment  
with fingertip control...

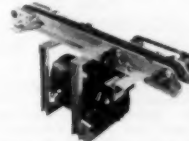
**SAVES PRODUCTION TIME  
HELPS INCREASE PROFITS**



A complete series of battery powered transfer cars for heavy duty use. Models for transferring dryer and rack cars or other heavy, bulky items. Two forward speeds and reverse, positive foot and hand brakes, or electric brakes, fingertip control. No trolley or other electrical connections needed. Selenium rectifier charges battery.



Electronically operated turntable speeds up loading, reduces operator fatigue. Rotates heavily loaded cars or racks to nine positions quickly and smoothly. Push button controls.



Heavy duty car pusher speeds loading of dryers and kilns. Capable of pushing 17 loaded cars into position. Mounts under track. Rugged construction means long life, minimum maintenance.

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National manufacturer is desirous of obtaining manufacturing and sales rights on any equipment or improvements used in concrete products plants on a royalty or outright purchase basis. Patents not essential. Protection guaranteed.

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We truck our machine to your plant and supervise entire cleaning and planing off of pallet residue. No need to shut down as we will keep up with production.

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Shepley vibrator concrete block machine, one-bay electric mixer, 300 steel pallets, electrical boxes and switches. \$900.00.

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### FOR SALE MODERN BLOCK AND TRANSIT MIX PLANT

Located in rapidly expanding area in Southeastern Michigan. Present manager going into ministry. Inactive partner has other interests. All buildings and equipment in excellent condition. Located on six acres. \$20,000 minimum down. All replies and answers strictly confidential.

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- Make "high-strength" wet-mix quality lintels. (same mix used in bridges, prestress, etc.)
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COLOR YOUR CONCRETE WITH LANSO CEMENT COLORS, available in 40 ATTRACTIVE shades. Suitable for all types of concrete products. Write for our new color card, copy of "Suggestions For Using Cement Colors," and for free samples and price list.

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100—Racks for cored steel pallets .....	10.00 each
100,000 pressed steel pallets in stock (Send tracing or sample for quotation).	

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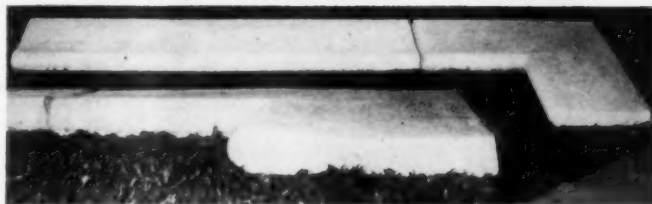
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No Matter What  
SIZE...



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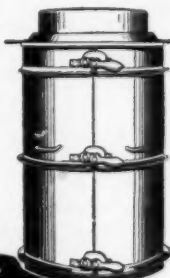
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Set The STANDARD For Producing Quality Pipe!

Over 50 years of experience go into the production of every Quinn Concrete Pipe Form. That's why the Quinn Heavy Duty form is recognized as the STANDARD the world over for producing quality concrete pipe at the lowest cost. Used in making pipe by vibration, spading, or tamping. Sizes for pipe 10" to 120" and larger. Tongue and groove (as shown) or bell end pipe in any length desired. No matter what size, shape, or length pipe you need, there's a Quinn pipe form made to fit your requirements. Write today for our FREE catalog and estimates.

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## this new Erickson is AR-TIC-U-LATED

MODEL P-7A 7,000 lbs.  
MODEL P-10A 10,000 lbs.



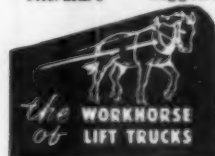
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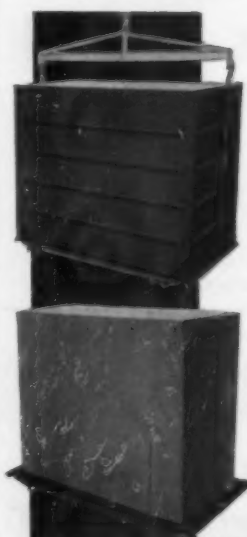
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Build rectangular, concrete septic tanks that will meet the approval of local health officers and sanitary engineers . . . build them quicker and at lower cost with NORWALK equipment.

Financing may be arranged.



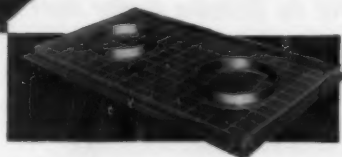
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Write for details

**NORWALK VAULT COMPANY**

DEPARTMENT A8

NORWALK, OHIO



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ESTABLISHED 1910 - 1911

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*For more information use postcard facing page 48.*



★ This is the 146th of a series of ads featuring leaders of the Concrete Products Industry who are stepping up block production with Besser Vibrapac machines.

# Another LEADER in the Block Industry!



Two Front Pallet Feed Vibrapacs installed in one of the plants of the A. C. Krebs Company. The machines are fully automatic.



President Krebs discussing plant expansion plans with (left to right) Charles Hermann, plant superintendent; Louis Serapiglia, office manager; Charles Garret, vice president; and R. D. Putnam, public relations man.



Besser Mixer with Skip Loader elevates mixed concrete to Vibrapac. Permits all equipment to be on ground level.

## **"No Culls" is the Rule with this Louisville Blockmaker...and Every Block Must Be HIGH-QUALITY!**

A. C. Krebs Company, Louisville, Ky., began block making operations in 1941. Four years later, they bought their first Besser Vibrapac, and they've been using Vibrapacs ever since.

"Besser Means Better Machines", relates A. C. Krebs, President and Owner, affectionately called "Silver Eagle" by his employees. And he added... "When better machines are built, Besser will build them."

Today, the Krebs Company operates two plants with three Besser Vibrapacs producing high-quality block, both lightweight and dense aggregate units... 2 core and 3 core. Sales have increased by leaps and bounds, largely due to the emphasis on quality block and customer service.

Besser Vibrapacs are preferred by blockmakers everywhere because they are fully automatic and continue to operate day after day, week after week, with no "downtime". Get the facts. Write today for literature.

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FIRST IN CONCRETE BLOCK MACHINES.

Yard scene. Note good housekeeping — paved areas, covered storage, no culls.

AS-176

